AMATEUR RADIO

JOURNAL OF THE WIRELESS INSTITUTE OF AUSTRALIA

VOL 52, No 5, MAY 1984

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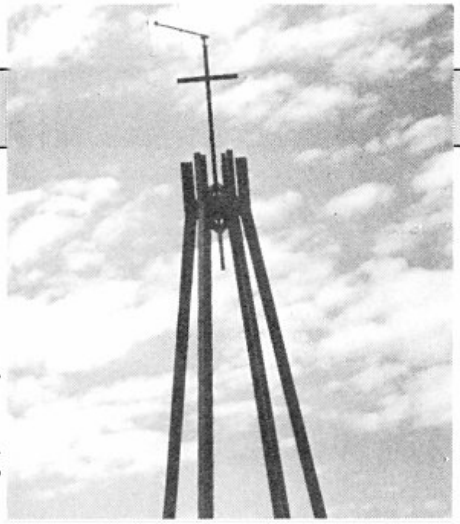

Photograph courtesy Nev Shaw VK2FS

Aerial of 2NBC – Story page 23

CONTENTS

TECHNICAL FEATURES

SPECIAL FEATURES

REGULAR FEATURES

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All copy for July AR must arrive at PO Box 300, Caulfield South, Vic 3162 at the latest by midday 25th May 1984.

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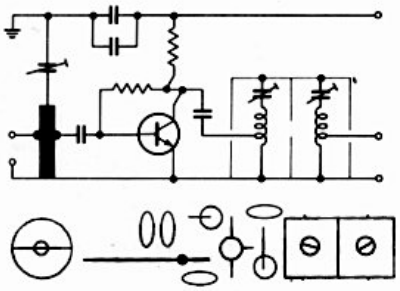
COMMUNICATIONS TODAY

The **May issue of Electronics Today International** (ETI) will feature "Communications Today" as a theme. It will be probably the most comprehensive overview of the broad aspects of communications in Australia published within the past five years. Articles scheduled for inclusion cover topics from **HACBSS** to **Ham Radio, Shortwaves** to **Spectrum Analysis.**

Articles of particular interest to the radio amateur and communications enthusiast include: **BUILD A HIGH PERFORMANCE 70 CM PREAMP**

The 70 cm UHF band is growing in popularity, but the front-end performance of much commercial gear available falls a long way short of the state of the art. This simple to build project will certainly soup-up that soggy RF stage and let you hear signals you never knew were there. What's more, you'll get change from $20 when it comes to buy the bits! It features good stability and out-of-band rejection and it's a 'snack' to tune up.



AMATEUR RADIO & THE FACE OF CHANGE

Great changes have occurred within our society over the past decade, sociologically and industrially, with swift and far-reaching technological development fuelling it. Amateur radio looks set for tremendous growth and change over the next decade or so as the "post-services society" emerges. Will the amateur fraternity be ready?

THE MAY ISSUE OF ELECTRONICS TODAY MAGAZINE.
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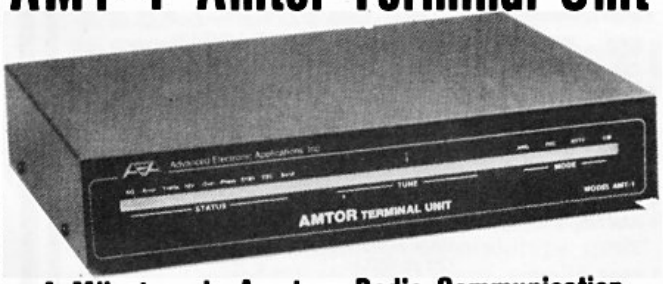

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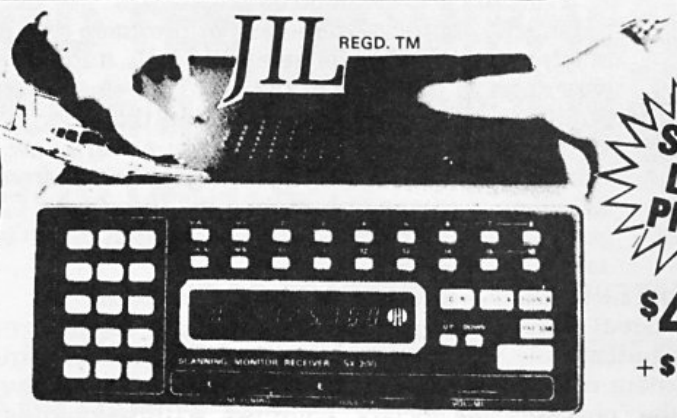

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a word from your EDITOR

Computers are becoming increasingly involved in amateur radio. The micro computer has moved both into the equipment and into the shack.

New transceivers use the microcomputer as an interface and controller between the front panel and the radio. The range of facilities available now is something that was an impossible dream ten years ago. The radio too has advanced but not nearly as much. The price though is now relatively much cheaper.

New interests in RTTY have been spurred by computer based equipment. Along with this have come AMTOR and other uses relying increasingly on computers.

Packet Radio is one of the newer uses and it shows great promise. This means of communications relies heavily on the computer. There is a great deal to be discovered and new frontiers requiring investigation.

Meteor Scatter has been around for a long time. Recently it has excited commercial interest. With computer control significant exchanges of information are possible. As amateurs we have the bands and equipment to do a lot.

The challenges are there. We as amateurs have a lot to do and a lot to look forward to. Remember to keep your fellow amateurs informed. Write an article for Amateur Radio. In that way others will be informed and join you at the new frontier.

Gil Sones VK3AUI

AR

WIA NEWS

MARITIME MOBILE OPERATION

In recent months, the Department of Communications has received a number of enquiries relating to the operation of maritime mobile networks in the amateur service.

It has become apparent that there is growing concern among sections of the amateur fraternity regarding the activities of certain stations participating in these networks. This may explain the Department's position in relation to maritime mobile operation within the amateur service.

As many are aware, maritime mobile operation has existed within the amateur service for many years. Provided that operation is conducted in accordance with the provisions of the Amateur Operator's Handbook (AOH), this type of operation is quite acceptable.

Concern has been expressed that some maritime mobile stations may be illegal and this has given rise to a certain amount of on-air discussion about the bona fides, or otherwise, of the stations involved. In some cases which have been investigated by the Department, it has been found that the persons concerned have, in fact, been issued with licences by the Administrations of their countries of origin.

In cases where a licensee is uncertain about the authenticity of a station, he should refrain from communicating with that station and should report the incident (giving callsign, time and frequency) to the nearest State or District Office of the Department. Upon receipt of such information, the Department can establish the validity or otherwise of the station concerned through direct liaison with the relevant overseas Administration.

It will, of course, be appreciated that any distress calls and messages received should be acknowledged and re-transmitted, with the least possible delay, to the appropriate authorities, without regard to the legal status of the station requiring assistance.

Another matter which has been raised is the use of dedicated frequencies for maritime mobile networks. It is important to recognise that no individual or group has exclusive rights to operate on any specific frequency within the amateur bands. In this regard, operators should observe the provisions of paragraph 7.1 of the AOH. Nevertheless, the Department would hope that the amateur service would foster a spirit of co-operation which would facilitate the operation of maritime mobile networks in much the same manner as it does for other group activities.

The Department strongly recommends that all mariners carry an approved maritime safety radiocommunication installation. In this respect, amateur equipment should be regarded as an auxiliary installation which is principally provided for hobby purposes.

A mariner's chances of surviving a distress situation will be greatly improved if he is able to communicate on frequencies of the established international maritime distress network. This can provide immediate radio contact with national maritime search and rescue resources via the network of coast radio stations operated around the Australian coast by the Overseas Telecommunications Commission. Also, international and coastal trading vessels all participate in the international maritime distress system and calls for aid may be intercepted directly by such vessels which may be near by.

Equipment employed in the International Maritime Mobile Service must conform to prescribed standards which are based principally upon reliability, ease of operation and international requirements. Amateur equipment does not meet these requirements and cannot be authorised for use within the Maritime Mobile Service.

AR

HORIZONTAL VERSUS VERTICAL POLARISATION AT VHF AND UHF

Gordon McDonald, VK2ZAB
59 Wideview Road, Berowra Heights, NSW 2082

Given the interest amateurs have in antennas and propogation it is surprising to find that the advantages and disadvantages of horizontal and vertical polarisation are not widely known. Amateur QSOs are usually conducted via unplanned paths over variable terrain which interferes with the signal. Under these circumstances the polarisation mode used has a marked bearing on the signal level at the distant receiver. This and other differences between horizontal and vertical polarisation are explained in this article.

PATH LOSS AND DEPOLARISATION

Technical journals contain several reports of practical field tests which have been carried out with a view to finding out what difference, if any, there is between horizontal and vertical polarisation. A wide range of environments is represented by those reports selected for comment here.

Tests conducted in northern Canada over a period of several months using several different paths at 150 MHz and 450 MHz revealed that path losses were always greater for vertical polarisation than for horizontal. This occurred on line of sight as well as on beyond the horizon paths.

On some beyond the horizon paths the loss was 6 dB greater for vertical polarisation but on average it was only about 4 dB worse than horizontal.

These tests were carried out by measuring the received signal level with the transmitting and receiving aerials vertically polarised and then comparing the received signal level obtained with the aerials horizontally polarised (REF 1).

A study carried out in forests in India used 50 to 500 MHz and a different measuring technique. The transmitting and receiving aerials were set at right angles to each other and the received signal level indicated the amount of cross polarisation discrimination.

It works like this: With the transmitting aerial vertically polarised and the receiving aerial horizontal the received signal level was recorded. The aerials were then reversed, transmit horizontal and receive vertical. The received signal level was then compared with that taken previously. The combination which yielded the larger signal level under these circumstances was that which had seen the greater change in polarisation over the path.

A greater change in polarisation means a greater loss because if the receive aerial was polarised the same way as the transmitter there would be less signal than if the signal hadn't changed so much on the way!

Many paths and many tests indicated that vertically polarised signals were depolarised much more than horizontally polarised signals. In some cases the received horizontal component of a vertically polarised transmission exceeded the received vertical component! (REF 2).

Interpreting these results for four paths in terms of loss yields 8 dB more loss for vertical polarisation at 150 MHz!

Studies carried out in cities have yielded similar results. One authority quoted in reference 3 gives the average advantage in signal level at a distance as 4.3 dB in favour of horizontal polarisation.

THEORY

Radio waves crossing the terrain encounter obstacles which absorb and dissipate some of the energy and which reradiate some of the energy as a secondary wave which may differ in phase and polarisation from the primary wave. The amount of energy absorbed or reradiated depends on the nature of the obstacles, their size, conductivity and distribution along the path.

It is not surprising to find that vertically polarised waves are affected to a greater extent than horizontally polarised waves because obstacles such as trees and buildings are mostly vertical in nature.

If absorption and reradiation by obstacles are the cause of depolarisation and loss, we may expect to find that paths which do not have obstacles exhibit less loss. This is indeed the case. Microwave links, for example, are designed to ensure that the terrain does not intercept and interfere with the signal. In this case the loss over the path is the same for horizontal as it is for vertical polarisation. The same applies to ground to satellite links. Links over water exhibit different characteristics and so do those which make use of the ionosphere.

HOW MUCH LOSS?

Arriving at an average figure for the extra loss suffered by vertically polarised signals over horizontally polarised waves is difficult because each path is different and no one has tried them all. The 4 dB quoted by the Canadian researchers is probably conservative because that is the nature of researchers and there are few trees in northern Canada. Interpreting the Indian results yields a realistic result (8 dB at 2 m). A well known amateur and antenna man quotes 7 dB in favour of horizontal polarisation at 100 MHz increasing with increasing frequency (REF 4).

The author suggests that, at two metres, 6 dB is a convenient and conservative figure to use. On this basis, a QSO using horizontal polarisation and a 25 W transmitter will produce the same signal level at the receiver as a vertically polarised QSO over the same path using a 100 W transmitter, all else being equal.

Unfortunately, that isn't the end of it, vertical polarisation has other problems as well.

MAN MADE NOISE

Radio noise produced by man's machines and electrical installations is more vertical than horizontal in polarisation. This particularly applies to motor vehicle ignition noise and to other noise sources close the ground. Many authorities agree that vertical polarisation is predominant in noise. Figures vary between 2 dB and 6 dB more noise on vertical than on horizontal polarisation (REFS 5, 6 and 7).

This means that vertical polarisation is not as good as horizontal even in those cases where the path loss difference is not significant. From an amateur point of view therefore, horizontal polarisation is preferable to vertical on HF as well as on VHF and UHF.

ANTENNA EFFICIENCY

All aerials are adversely affected by the presence of conducting bodies in the vicinity. This particularly applies to horizontal conductors near horizontally polarised antennas and vertical conductors near vertically polarised antennas simply because, in those cases, the energy coupled into the parasitic conductor is greater than would be the case otherwise.

Since masts and guy wires are vertical, or nearly so, a vertically polarised antenna presents a problem which requires special treatment if it is going to be efficient. The top of the mast may have to be made of insulating material or else the antenna may be mounted out to one side on a horizontal boom. Insulating materials, if used, must be good quality and not subject to changing characteristics during wet weather.

Feeder lines are conductors and these must also leave the antenna at right angles in order to avoid interference with the field.

Yagis, phased arrays and combinations

which use dipoles rely on symmetrical distribution of current across the element in order to produce the intended pattern. This symmetrical current distribution is only possible when the impedance to ground or nearby conductors is the same on both sides of the dipole.

None of the above present any difficulty with a horizontally polarised antenna but if you wish to mount an antenna such as a yagi in the vertically polarised manner, all are problems.

WIND RESISTANCE

Wind normally blows horizontally and therefore horizontal antennas offer less wind resistance than the same antenna mounted vertically. This may not present much of a problem if you use a five-eighth whip but if you are into DX it can be quite a handicap.

MOBILES AND MAGPIES

So far there has been nothing to recommend vertical polarisation but the position is not all bad. There is no doubt that whips on cars are more convenient than halos or turnstiles and there is evidence to suggest that near the ground vertically polarised field strength is somewhat higher than horizontal if everything else is equal. The trouble is that everything else is normally unequal and this small plus is swamped under the numerous minuses. In any case the only aerials which would benefit are those near the ground such as those on cars and there is some evidence to suggest that horizontal polarisation has an additional benefit for mobiles in that the signal strength variations which occur when the vehicle is in motion may be less than when vertical polarisation is used.

The only significant advantage a vertical aerial has over a horizontal one is that birds don't perch on the elements. Hi!

CONCLUSION

It has been shown that compared to vertical polarisation used for normal amateur work, horizontal polarisation produces more signal at the receiver, is less noisy, enables more efficient antennas to be made and kept up in high winds and suffers from no significant disadvantage.

RECOMMENDATION

The use of vertical polarisation should be phased out!

REFERENCES

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3 & 6 Television Standards and Practice. Donald G Fink pages 336 and 337.
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7 Electromagnetic Interference and Compatibility Vol 3. Donald R J White Chapter 2 sect 2.3, Chapter 5 sect 5.5

AR

TWO-WAY MARRIAGE GIVES OUR HOBBY GOOD PUBLICITY

Jim Linton, VK3PC
4 Ansett Crescent, Forest Hill, Vic 3131

The way a husband and wife keep in touch with each other on radio while thousands of kilometres apart made a small feature article in the March issue of Prime Time magazine.

Photo courtesy Prime Time

The couple involved were Joyce Aldridge VK3VBK in the bayside Melbourne suburb of Mt Eliza and husband Stan P29SO who works in the remote jungles at Tububul near the Papua New Guinea-Irian Jaya border on a power scheme for the OK Tedi Mine.

Joyce was heard chatting to Stan on air by a member of the Victorian Division, who wishes to remain anonymous, and alerted the WIA Public Relations Officer to the possibility of a human interest story along the lines of a husband and wife keeping in contact via amateur radio.

A contact was made with Graeme Kemlo, a freelance writer who contributes to Prime Time magazine, and the story was written.

Prime Time magazine is a monthly publication aimed at people forty five years and older with a slant for those planning retirement or already retired.

Photographs of Joyce, sixty one, and Stan, sixty, at their microphones were used with the article which explained Stan only had to press a button to be with his wife.

The article said the Aldriges were among a growing band of radio amateurs who speak to each other around the world on shortwave.

Joyce explains how in about 1975 while she and Stan were crewing a yacht to Sydney for the Sydney-to-Hobart race they tied up in Eden alongside a boat were a fellow was talking by radio around the world.

She said: *"We were fascinated by the possibilities and later joined a local radio club.*

"Being an electrical engineer, Stan got his full licence pretty quickly."

Joyce qualified for her Novice licence with the aim of keeping in contact with Stan while he was away in P29, but can also be heard chatting frequently on air with a friend in the United States who shares her interest in patchwork and quilting.

Joyce is quoted in the article explaining the hobby is for both sexes and is "booming" among the senior generation of the population. She said: *"There are a lot of women on the radio — it is another step to world friendship, and ideal for when you grow out of sailing and active tennis."*

The publicity given to our hobby by this article and another in New Idea magazine last year is part of the on-going Public Relations campaign being conducted by the Victorian Division.

AR

FM DEVIATION MONITOR USING A PHASE LOCKED LOOP

Lloyd Butler, VK5BR
18 Ottawa Avenue, Panorama, SA 5041

Use of a phase locked loop as an FM demodulator in a deviation monitor enables it to be used over a large section of the 2 metre band without retuning or change of crystal.

INTRODUCTION

A deviation monitor can be made by connecting some form of frequency modulation (FM) detector to an AC voltmeter and calibrating the meter in units of frequency deviation. One method of detecting or demodulating the FM signal is to use a phase locked loop (PLL). A voltage controlled oscillator (VCO) is locked to the FM signal frequency by comparing its output with the FM signal in a phase comparator which generates a correction voltage to control the frequency of the VCO. This voltage is a function of the signal frequency and hence is a demodulated version of the signal frequency.

Conventional FM demodulators, such as the frequency discriminator, require precise tuning, that is they are fixed frequency devices. Tuning can only be achieved by varying the frequency of a heterodyne oscillator. The advantage of the PLL is that it can be used to detect FM signals, without retuning, over a frequency range equal to the capture range of the loop and with a fixed frequency heterodyne oscillator, if heterodyning is required.

The following text describes a deviation monitor which has been constructed using a phase locked loop as an FM detector. Circuit detail is shown in Figure 1. The essential circuit blocks are a heterodyne oscillator, frequency mixer, phase locked loop and a metering circuit calibrated in frequency deviation. The heterodyne circuit is fixed for the 2 metre band but the monitor could be used on other bands with other appropriate heterodyne circuit design.

OPERATING FREQUENCY

The VCO in the phase locked loop is set for a free running frequency of 1 MHz. The approximate capture range is 500 kHz, hence the VCO will lock to any frequency in the range of 750 to 1250 kHz.

Equipped with the crystal specified, a frequency of 145.3 MHz is generated and this heterodynes with signals in the 146.05 MHz to 146.55 MHz region to provide a beat frequency for the PLL input within 750 to 1250 kHz. The spectrum 146.05 to 146.55 includes the input frequencies of popular repeaters (old channels 41 to 48) and simplex (old channels 49 to 51).

FM DETECTOR

Integrated circuit N1 (type XR215) and associated circuits operate as a phase locked loop and FM detector. The free running frequency of the VCO in N1 is set by the values of C7 and R23.

Demodulated FM output is amplified by an operational amplifier in N1 package and by N2 (μA741). The switched feedback network of N2 (SW1, R12, R13, R14) is also used to select the deviation range by changing the gain of N2 circuit. Deviation ranges of 0-5 kHz, 0-10 kHz and 0-50 kHz are provided.

THE METERING CIRCUIT

The audio output of N2 is rectified by either diode V1 or diode V2 to charge either C10 or C11 to the peak value of the audio waveform. Positive or negative peak is selected by switch SW2 to feed micro-ammeter M1 via either R20 or R21. In conjunction with these resistors, M1 forms a peak reading voltmeter calibrated in terms of frequency deviation.

Deviation sense switch SW2 is provided to check for difference readings between positive and negative peaks, indicating non-linearity or peak clipping on the demodulated waveform.

There is always a problem with meter scale linearity when using semiconductor diodes as meter rectifiers at low voltage. The metering circuit has been devised so that the linear scale of the micro-ammeter can be used over its essential range. Gold bonded diodes (type 0A47) were selected because of their low forward voltage and these are forward biased by resistor network R17, R18, R19, R22 and R24 to the point where conduction just commences. A small residual reading is indicated on the meter but linearity is good above five percent of the scale.

Resistors R17, R19, R22 and R24 are shown in the diagram as 1 percent but if these are not available, the important point is to select R17-R19 and R22-R24 as matched pairs.

A demodulated output is provided for external monitoring with a CRO or headphones. LP filter (R26-C12) restricts frequencies above the speech range.

RF CIRCUITS

The RF input circuit is arranged to load the transmitter to about 1 W, terminated in 50 ohms. The power should not exceed 2.5 W, otherwise the ratings of resistors R101-105 will be exceeded. If transmitter power cannot be reduced, the transmitter must be terminated in a suitable dummy load and the deviation monitor fed via an attenuation network.

The heterodyne signal is generated in the circuit of V201, controlled by crystal X201 operating in an overtone mode at a frequency of 48.4333 MHz and tripled to 145.3 MHz in the same stage. (*This circuit was used in the VK3ABP 2M converter — AR May 1982.*) V202 is an isolation stage to prevent loading on V201 and provide low source impedence drive to the mixer.

The input signal and heterodyne signal are mixed by diode V301. A following bandpass filter removes the VHF components and provides a degree of rejection to beat components not in the 750 to 1250 kHz range.

At this point it must be pointed out that the VCO in the loop can lock on to frequencies harmonically related to frequencies within the capture range. This form of operation does not give the correct deviation readings, as calibrated, because the amount of deviation detected is multiplied or divided by the same harmonic relationship.

As the bandpass filter has finite slope, beat frequencies near the edges of the operating range are not rejected and these must be avoided. For example, a signal frequency of 145.9 MHz would heterodyne with 145.3 MHz to give a beat frequency of 600 kHz which might get through the filter and lock the VCO within its capture range of 1200 kHz. Under these conditions, deviation readings are erroneous and if such a frequency must be used, a different crystal is required.

COMPONENT ASSEMBLY

The complete unit has been assembled as an experimental prototype but a printed circuit board has been set out for the phase locked loop, amplifier and metering circuits (refer Figure 2). Components C13 and C14 were added after the board was prepared and these must be fitted in series with R10 and R26 respectively in the locations allocated to the latter components.

The RF load, heterodyne oscillator/multiplier and bandpass filter were each fitted in separate shielded compartments as a

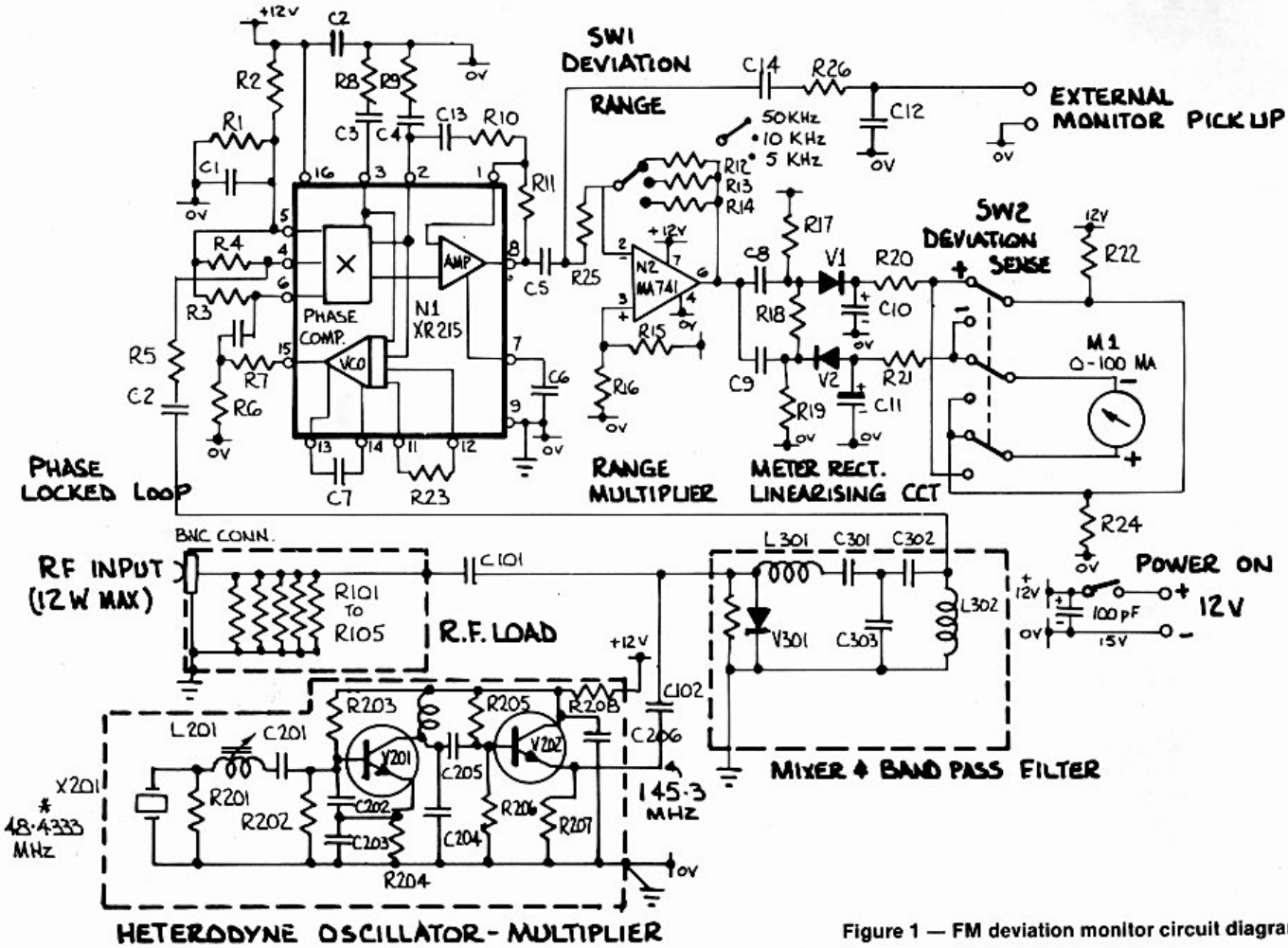

Figure 1 — FM deviation monitor circuit diagram.

RESISTORS

R1 –	5K6	
R2 –	5K6	
R3 –	2K2	
R4 –	2K2	
R5 –	6K8	
R6 –	8K2	
R7 –	2K2	
R8 –	47Ω	
R9 –	47Ω	
R10 –	4K7	
R11 –	100K	
R12 –	10K	
R13 –	51K	
R14 –	100K	
R15 –	10K	
R16 –	22K	
R17 –	47K	
R18 –	2K	
R19 –	47K	
R20 –	16k	1%
R21 –	16K	1%
R22 –	1K	1%
R23 –	1K5	
R24 –	1K	1%
R25 –	10K	
R26 –	10K	
R101 to	105	270Ω ½W
R201 –	560Ω	
R202 –	4K7	
R203 –	10K	
R204 –	470Ω	
R205 –	18K	
R206 –	18K	
R207 –	1K	
R208 –	100Ω	
R301 –	470Ω	

CAPACITORS

C1 –	0.1µF	
C2 –	0.1µF	
C3 –	1500pF	
C4 –	1500pF	
C5 –	1.0µF	
C6 –	330pF	
C7 –	200µF	
C8 –	10µF	10V
C9 –	10µF	10V
C10 –	4.7µF	10V
C11 –	4.7µF	10V
C12 –	2700pF	
C13 –	1µF	
C14 –	0.1µF	
C101 –	1.0pF	
C102 –	1.0pF	
C201 –	100pF	
C202 –	68pF	
C203 –	47pF	
C204 –	4.7pF	
C205 –	10pF	
C206 –	100pF	
C301 –	130pF	
C302 –	130pF	
C303 –	220pF	

TRANSISTORS

N1 –	XR215
N2 –	MA741
V1 –	OA47
V2 –	OA47
V201 –	2N3563
V202 –	2N3563
V301 –	IN914

COILS

L201 – 9½ TURNS ON 5mm NEOSID

L202 – 5 TURNS 7mm I.D. 1mm SPACING

L301 –	330µH
L302 –	330µH

NOTE:– XTAL 48.333 SELECTED FOR FREQUENCIES IN THE REGION 146.1 to 146.5MHz.

R20-21 22-24 LOWER TOLERANCE CAN BE USED IF SELECTED MATCHED PAIRS ARE USED.

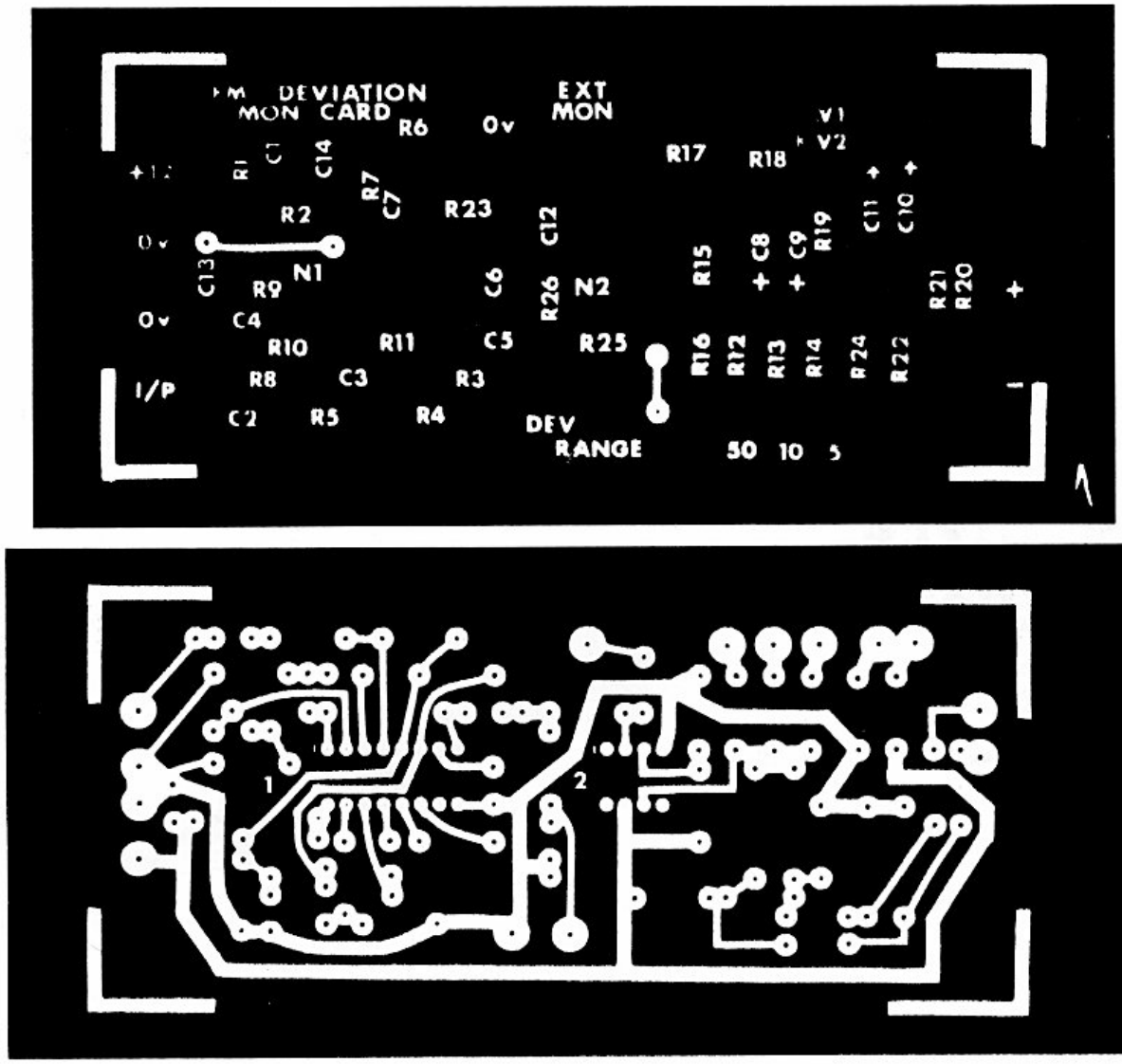

Figure 2 — Printed circuit card for phase locked loop, amplifier and metering circuits.

precaution against circuit interaction. Each of these circuits was hard wired on Vero board, but wiring for the oscillator/multiplier must be kept short and a printed card would be a desirable improvement to ensure this.

TUNING AND TESTING

Initial testing should include the following:

(1) *VCO free running frequency — (check with a frequency counter or other frequency measuring device at pin 15 of N1). The frequency should be as close as possible to 1 MHz and, if necessary, can be adjusted by trimming the value of C7.*

(2) *Heterodyne oscillator — Check with the counter that the circuit is oscillating and tripling to 145.3 MHz by monitoring across R207. Peak output level by adjustment of L210 and L202. If an instrument is not available to read signal level at 145 MHz, the measurement could be carried out using an RF signal at the input and measuring the beat signal at C2. L2 adjusts by expanding or compressing the winding.*

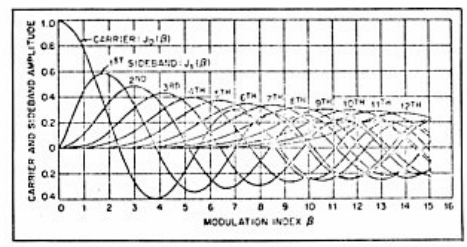

Figure 3 — Bessel functions. Variation in amplitude of carrier and sideband components with change of modulation index.

CALIBRATION

Using the components specified, the unit should operate with reasonable accuracy, but variation in component values, within their tolerance, could be expected to provide some variation in accuracy. If precision is required, calibration should be carried out.

A number of methods could be used to calibrate the unit, depending on test instruments available. An RF source could be used either at 1 MHz fed to the PLL input (C2), or at VHF, fed to the unit input using a transmitter or VHF signal generator. Whatever the source, the signal must be frequency modulated with a constant tone and the amount of deviation established. Some signal generators are calibrated in frequency deviation. Calibration against another deviation meter could be carried out, if one is available.

The calibration method used by the writer makes use of the Bessel functions. Figure 3 illustrates the variation in the amplitude of the carrier and sideband components of an FM signal with variation in modulation index. (Modulation index is the ratio of frequency deviation to modulating frequency.) Note that the carrier passes through a null when the modulation index is 2.40, 5.52 and 8.65. This means, for example, that if a modulating frequency of 1000 Hz is used, the carrier will pass through a null when the frequency deviation is 2.4 kHz, 5.52 kHz and 8.65 kHz. A matrix can be drawn up using different modulating frequencies to produce nulls for various calibration points.

The best method to detect the nulls is to use

a spectrum analyser which can display all the various modulation components in the frequency domain. Measurements can be carried out at the spectrum around 1 MHz monitored at C2. Another method is to use an AM receiver tuned to 1 MHz with the BFO turned on. The carrier frequency beat has to be picked out from the other sideband component beats and it does require some degree of imagination in selecting the right one.

Calibration can be adjusted by trimming the value of R25. Variation between ranges can be minimised by initially selecting resistors R12, R13 and R14 in the precise ratio of 1:5:10. If the null carrier method is used, it is easier to find the nulls if a large deviation is used on the top deviation range and to rely on the scaling of R12, R13 and R14 for the lower ranges.

AR

JOHN MOYLE FIELD DAY

During the 1984 John Moyle Field Day Bernard VK3YTT ventured to Trig Point "Dobbins" 550 m ASL, which is situated 12 km south of Morwell, to operate in the "H" portable VHF section of the contest.

Bernard operated from his camper van using a 5 kVA power source, a four element Yagi and IC551 on 6 m and a twelve element ZL special, and FT290 R and 50 W linear on 2 m.

A total of 103 contacts were made, the best contact being with VK2WG portable near Wagga on 2 m SSB.

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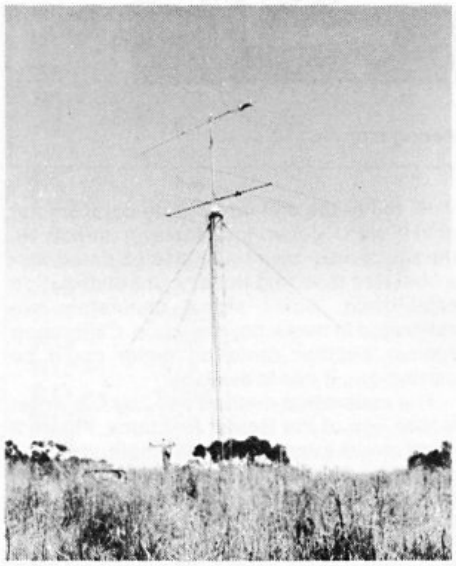

NEW IDEA FOR MATCHING HELICALS TO 50 OHM FEED

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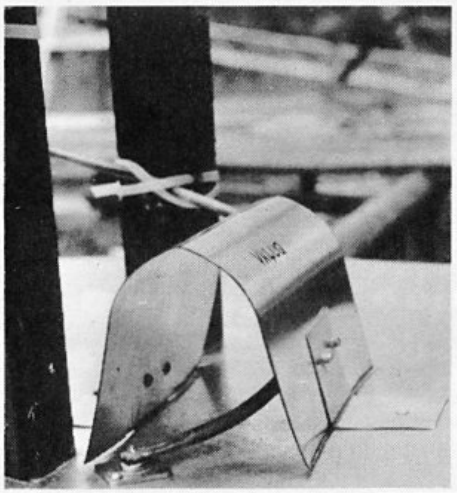
The photo is of the feed point and first half turn of a 435 MHz helical antenna, constructed in accordance with the formulae in the ARRL Antenna Handbook. The article describes a simple way of matching it, literally by applying a quarter-wave transformer.



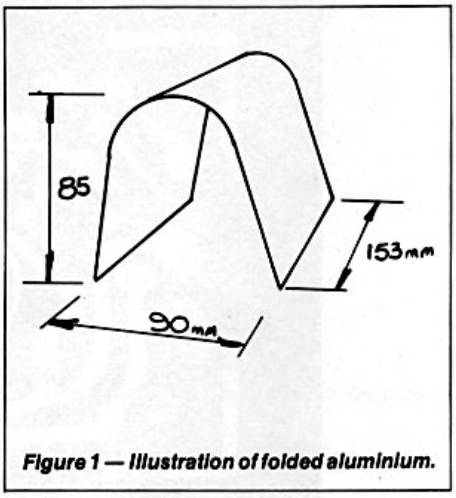


Figure 1 — Illustration of folded aluminium.

The helix is 10 mm copper tube and the reflector screen is aluminium sheet. The sheet is 0.8 lambda per side and the copper tube has been flattened at the end to facilitate soldering on to the "N" connector. The helix is fed at the periphery with 50 ohm coax.

CONSTRUCTION DETAILS:

Using a piece of aluminium sheet measuring 200 mm x 153 mm, bend it into the inverted "U" shape as per the illustration (Figure 1), so it will look like a tunnel. The length being 153 mm, the base 90 mm wide and the height 85 mm.

Connect a VSWR meter directly at the feed point, or in-line a wavelength or so from the feed point. With the coax connected and a transmitter on 435.1 MHz, (when OSCAR-10 is not in range) the meter will indicate a very high VSWR.

Place the shaped aluminium over the first quarter-wavelength of the helix, with the base of the inverted "U" sitting on the reflector screen, and one end of the "tunnel" directly above the feedpoint end at the start of the helix.

An immediate change in the indicated VSWR will be noticed. Move the device slightly from side to side and back and forth, being sure not to let it actually come into contact with the helix. There will be a position where there will be zero reflected power, after the hand and body are removed from close proximity. Switch off the transmitter and mark the edges of the device on the reflector screen with a felt pen, indicating correct location.

Then, bend a couple of pieces of aluminium sheet, say 60 mm x 20 mm, into an "L" shape, more like 110 degrees than 90 degrees, drill a couple of holes through the "L" shapes, into the reflector screen and the matching device and pop-rivet the thing into position. Make sure that the ends of the rivets do not touch the helix.

Check the VSWR again and if all is still OK, try it on a distant receiver like OSCAR-10. I have worked OSCAR-10 with 4 W to an eleven turn helix, with many other stations using the satellite at the same time, and not on a QRP day. I used a five element Linear polarised Yagi for receiving. This device also works well on a six turn helix for 2 metres, with larger dimensions to suit the lower frequency.

Be sure that the helical antenna does not touch the aluminium matching device. Painting the antenna with "Tctyl" or a similar compound should inhibit any corrosion.

AR

THE EXPERIMENTAL AMATEUR

THE DESIGN OF NORMAL MODE HELICAL AERIALS

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The design and manufacture of the mechanical parts of mobile aerials is a most challenging task and can be quite difficult but the most tedious task is winding the helix. It is very frustrating to find after carefully winding a helix that it is too long or too short. After several such cut-and-try constructions I decided that if I was to continue building my own mobile aerials I needed a better method.

The most popular procedure is to wind a "guesstimate" length of wire on to a "scrounged" fibreglass rod, usually an abandoned fishing rod, and then tune this to the desired frequency by adding or subtracting turns and trimming a tuning tip. I found that by applying a little maths the helix can be very near the desired result first try; at the higher frequencies I have been able to delete the tuning tip. The procedure I have adopted is based on the information and formulae given in the ITT "Reference Data for Radio Engineers" (sixth edition).

For any desired frequency a wide range of wire sizes, former diameters and former lengths can be used but the following almost self-evident facts must be kept in mind:

(i) Effective height and radiation resistance improve as the length of the aerial is increased.

(ii) The larger the diameter of the wire the better the efficiency.

(iii) A helical aerial has some horizontal polarisation which increases with increasing diameter and decreasing turns per unit length.

There are three common types of helical mobile aerial;

(a) the helix is distributed evenly over the full length of the former,

(b) the helix is in two parts; a close wound tip section and a larger pitch bottom section,

(c) a close wound tip section on a straight conductor bottom section (copper braid is popular for the bottom section).

Preliminary design requires some or all of the following decisions

(a) the operating frequency
(b) the desired length of the aerial
(c) the diameter of the former or rod
(d) the size of the winding wire
(e) type

Decisions a, b and c for amateurs are easy; the operating frequency will be one of the amateur bands and the length and diameter of the aerial will be those of a solid or tubular fibreglass fishing rod. The type of aerial is open to experiment. I haven't proved any difference in performance from the three types: distributed helix, combination distributed and close wound, or close wound tip. The close wound tip type is the easiest to construct but the others should have the edge in efficiency. To illustrate the design I will use examples of some of my own efforts.

The basic equation looks formidable but it is easily conquered with a scientific calculator. It is:

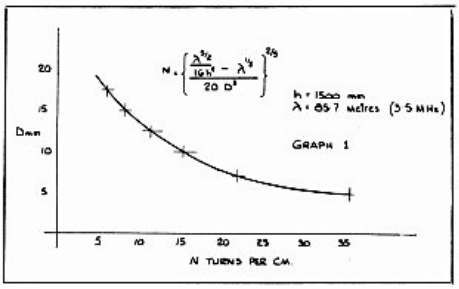
$$h = \frac{\lambda}{4}\left[1 + 20\,(ND)^{5/2}\left(\frac{D}{\lambda}\right)^{1/2}\right]^{-1/2} \quad \ldots (1)$$

where h is the length of the helix
N is the turns per unit length
D is the diameter of the rod former (average if tapered)
λ is the wavelength

The first design example is for a distributed helix wound on a tapered rod 1500 millimetres long, average diameter 13 millimetres (18 mm to 8 mm) for operation at 7.1 MHz. The only unknown is N therefore equation (1) has to be rearranged to:

$$N = \left[\frac{\frac{\lambda^{5/2}}{16h^2} - \lambda^{1/2}}{20D^3}\right]^{2/5} \quad \ldots (2)$$

The answer is 5.5 turns per centimetre or 825 turns total distributed over 1500 mm. About 34 metres of wire is required.



Because not all "scrounged" fishing rods will have an average diameter of 13 mm and to save from brainstorm, those without an HP33 or similar, I have prepared table 1 and graph 1. From the graph you determine the number of turns per centimetre for an average diameter between 5 and 17.5 mm for a 1500 mm helix for use at 3.5 MHz; for other frequencies an approximate turn per cm value can be obtained by dividing the 3.5 MHz value by 2 for 7.0 MHz, 4 for 14 MHz and so on. A better result will be obtained if a graph is drawn for each band using the tabulations.

The size of wire should be between 24 gauge (0.6 mm) and 14 gauge (1.7 mm); smaller than 24 g is too lossy and larger than 14 g is too hard to wind on the smaller diameter formers. 24 g can be wound at between 15 and 18 turns per cm therefore choice of rod diameter will be limited to those to the right of the dotted line in table 1.

From the table 1 it is obvious that the larger diameter rods give the best results in terms of quantity of wire and number of turns. I recommend rods with average diameter greater than 7.5 mm; either solid or tubular.

TABLE 1

D (mm)	2.5	5	7.5	10	12.5	15	17.5
N for 3.5 MHz	82.0	35.5	22.0	15.5	11.8	9.5	7.5
7.0	40.5	17.6	11.0	7.7	6.0	4.7	3.9
14.0	19.8	8.6	5.3	3.7	2.9	2.3	1.9
21.0	12.6	5.5	3.4	2.4	1.8	1.5	1.2
28.0	8.8	3.8	2.3	1.7	1.3	1.0	0.8

The solid glass blanks are stronger and more flexible but I have not broken a tubular rod yet.

The distributed helix in the above example is probably the bet type but it is the hardest to construct. I have a reasonable amount of success with the concentrated tip helices and I don't think it is worth the extra trouble to build the distributed type. My design procedure for the concentrated tip types follows.

Start by choosing a suitable wire gauge and thus the number of turns per unit length. I use mostly 24 g enamelled (or the modern equivalent) and assume 1.6 O turns per millimetre. Equation 1 is solved for h at several values of D; table 2 is the result for 24 g and table 3 is for 20 g.

TABLE 2 (N = 1.6 turns per mm)

D (mm)	2.5	5	7.5	10	12.5	15	17.5
hmm 3.5 MHz	10152	4003	2206	1437	1030	784	622
7.0	4415	1692	929	605	433	329	262
14.0	1904	714	391	254	182	139	110
21.0	1161	431	236	153	110	83	66
28.0	816	301	164	107	76	58	46

TABLE 3 (N = 1 turn per mm)

D (mm)	2.5	5	7.5	10	12.5	15	17.5
hmm 3.5 MHz	14903	6938	3924	2574	1848	1408	1118
7.0	6763	2963	1658	1084	778	592	470
14.0	3026	1260	699	457	327	249	198
21.0	1878	763	422	275	197	150	119
28.0	1336	533	295	192	138	105	83

In tables 2 and 3 the only useful helices to use alone are those within the dotted lines. To the right of the dotted lines the effective height is too small and to the left the physical length is too great for mobile use. The short helices however can be useful for radials where a "ground plane" is required (eg "The Jenny Dipole"). Also the short helices are the basis for the combination and tip loaded design.

I advise making provision for an adjustable tip section in all aerials to provide for the effect of different mountings and environments. Also at the lower frequencies the bandwidth is very limited and a tip is necessary to tune over the band.

AR

Cosmic Communications

by GRAHAM MOWAT ZS5KL
Reproduced by arrangement from Radio ZS, April '82

I have received several requests for an updated version of my previous article "CQ Outer Space" written some years ago. Although there have been several significant developments in this quest for intelligent signals from the universe, the possibilities of reasonable two way communication have grown considerably less.

To understand a problem of this kind it is necessary to break it down into component segments in order to appreciate the immense difficulties involved in the quest for interstellar messages.

Any faint intelligent radio signal that started on the furthest outer fringes of our or another galaxy and by the time it has crossed the mind boggling distances of the cosmos and reached earth, it is only a minute fraction of its original power. It has now to break through the blanket of man made static that surrounds our earth. This static blanket even extends to the very high UHF frequencies and originates from radar, early warning systems, missile control, experimental defence radio systems, natural phenomena in the ionosphere, northern lights and magnetic flux zones.

Before the start of Project Ozma in America, the panel of scientists decided the logical choice of any listening wavelength would be twenty one centimetres, which is the wavelength of hydrogen, the common denominator of the universe. Project Ozma was the first serious attempt to listen in to the cosmos, but with the crude equipment available at the time it ended in failure. A great deal of the natural radio noise from space is caused by hydrogen activity and a recent development has been the use of very sophisticated computers which can analyse the received noise and separate the hash into understandable components. Ozma was too early to benefit from new computer science and relied largely on photographic traces from oscilliscopes and ordinary aural listening. Further confusion was caused by pulsars, which are dying neutron stars which emit varying natural radio signals. Some of these are regular pulses which were thought to be intelligent messages from space, but it is now assumed the regular pulses are due to the neutron stars regular rotation.

Up to recent times the two main limitations in our receiving installations were the equipment and the giant parabolic antennas. With the development of super sensitive receivers and high gain amplifiers, this side of the problem was largely overcome. This left the main difficulty, the antenna. To overcome this deficiency Project Cyclops was instituted. This was named after the mythical one-eyed giant of ancient legend, but although heralded as the complete answer to the antenna problem, it never progressed beyond the drawing board. A very much modified scheme was placed in operation by N.A.S.A. in the western U.S. desert area which involved seven giant parabolic dishes all fully steerable and mobile. These are computer controlled and represent the latest advances in radio telescopes. Placed in this remote area which is relatively free from nearby man-made interference, their main function is ordinary space exploration with only a fraction of time devoted to the search for intelligent signals. A brief glimpse of this antenna array was obtained during the screening of the TV series "Cosmos".

This represents another restricting factor in the development of any research programme of this kind. Namely, money and time. When Project Cyclops was designed in 1970/1 the cost was estimated at $600,000,000 and only represented the installation costs. This giant scheme included a staggering 2500 one hundred metre diameter parabolic dishes located on an eight kilometre square site in a remote area. Todays costs would be well in excess of 1000,000,000 dollars which explains the reason why the scheme never left the design board. Operational expenses with a large team of technicians and scientists would provide a formidable annual budget all working on a 24 hour shift basis.

The designers of Cyclops claimed the array would be capable of detecting signals in space over twenty thousand light years away! There would still remain the nagging problem of man-made and natural static to contend with, but N.A.S.A. (National Aeronautics and Space Administration) contend the most ideal method to overcome this difficulty is to use an orbiting space platform or to wait until a moon base is established where conditions would be ideal. On the moon a modest antenna array would outperform even the giant earthbound Cyclops.

Russia is well ahead of America in the search for intelligent life way out in the outer space, but with their usual reticence very little is known of their progress in this field except for odd news snippets that are released from time to time. It is known that they have large radio telescopic installations in the Pamir, Cauasus and Mamchatka mountains that devote a great deal of their time to the search for extraterrestial life and signals. A giant installation has been under construction at Ratan in the Soviet Union for a number of years, but nothing is known of any results obtained in recent times.

The biggest deterrent of all involves the speed of a radio signal in free space. Light and electromagnetic waves travel at exactly the same speed, namely, 186,272 miles per second which sounds incredibly fast, but when measured against the stupendous distances of outer space, is merely a snails pace. A radar signal aimed at Venus takes approximately six and a half minutes to return, longer when Venus is further away from us. This time was measured at a close approach of our neighbouring planet, but in astronomical distances, just around the corner. As an aside, the transmitted power was over 12000 watts, but the return signal measured at the receiving antenna, a mere 1 watt! To return to the problem of the speed of a radio signal, we know with reasonable certainty that our own solar system harbours no intelligent life, so our quest must be far beyond Pluto, the farthest out planet.

The nearest system comprising of a sun with possible planets is Alpha Centauri which is 4.3 light years away. (A light year is the distance light will travel in one year which is six million, million miles.) As distant planets cannot be observed visually as they have no light of their own, it is only by calculating the minute amount of "wobble" or irregularities of the parent sun that their presence can even be suspected. As Alpha Centauri is a double sun (almost a triple sun owing to the near presence of another) it is doubly difficult to ascertain the presence of a planetry system. For the sake of argument let us assume the presence of a planet of Alpha Centauri similar to our own world. Let us go further and grant this planet intelligent life sufficiently advanced to have developed radio communication and they had the facilities enabling them to contact us. (From our track record I cannot imagine why!) Their radio signal of greeting would take twelve years to reach us, give or take a year for our computers to decode and analyse the message. Our transmitted reply would take another twelve years to reach them, a total of twenty five years! This then the difficulties with Alpha Centauri, our nearest sun system. Others with possible planets are Epsilon Eridani, Barnards star, Epsilon Indi and Tau Ceti all between six and eleven light years distant.

As can be appreciated regular two way radio contact is out of the question and if anything is heard by us it would be only a small part of some long forgotten message.

Another significant point to consider regarding cosmic radio signals is the fact that when we stand outside on a clear, starry night we are actually looking at the past owing to the fact that the light from far distant stars takes in some cases, hundreds of years to reach us. With the worlds largest astrononical telescopes scientists can peer at a galaxy that disintegrated in a giant explosion thousands of years ago. Observe the Crab Nebula through a modest telescope and witness a giant supernova explosion that occurred in1054, nine hundred and twenty eight years ago! Conversely, an astronomer on a far distant planet with a superdooper electron telescope pointed at us could observe the birth of a dinosaur or watch what actually happened between Adam and Eve in the Garden of Eden!

Exactly the same principle applies to radio transmissions. If by chance we picked up an intelligent signal from some distant galaxy we would actually be listening in to the past. Since that original signal was transmitted and received by us, that particular planets civilization might have progressed so far that radio as a means of communication might have been discarded as archaic or alternatively, it had destroyed itself in some vast atomic conflict.

Human life on earth or rather our established knowledge of it only covers a period of about a million years although there are very strong indications that other, civilizations have risen, run their courses and vanished over many millions of years, but here we are concerned only with our own epoch. It has taken man almost all of this million years from bashing each other with rocks up to 1800 A.D. which is really the start of our technological era. From 1800 up to the present 1982 is a mere one hundred and eighty two years and of this period only about eighty two concern the development of radio. Beyond the year 2000 we will most probably have discarded radio as a means of communication and developed laser or maser type systems. Put another way, only 100 years of the million can truly be described as technical. If there are civilizations on distant planets we must coincide with the same period of their own development! If for example there are 200 planets in the galaxy with human or similar life, the chances of hitting an equivalent 100 years of their development are truly astronomical, something in the order of 70000 to one and completely disregarding the time factor discussed in

To sum up. The possibilities of radio contact with outer space? Almost zero for two way signal exchanges, but the chances of picking up stray intelligent transmissions are reasonably good. In 1972 three respected Russian scientists Vsevelod Trolitski, Samuil Kaplan and Dr. Nikolai Kardashev, all of the Radio Institute of Gorki maintained that they had and had continued to receive over the years signals that were of intelligent origin and by complex computer analysis declared these emanated from *within* our solar system. Eventually they decided that these transmissions emanated from an orbiting space probe located beyond the orbit of Mars. This probe was not of earthly origin and was concealed in the asteroid belt which lies between Mars and Jupiter. Further frantic enquiries by Western scientists met with the traditional Russian silence and nothing further was heard of this startling announcement and further enquiries were politely ignored. Possibly these three men had made a colossal booboo and in the early hours of a bitter Russian winter these erring scientists were quietly shipped off to the salt mines of Siberia to work out their transgressions and repent their folly.

Just for a moment assume this Russian report was factual and it was an interplanetry probe from the constellation of Cygnus. This probe could contain a computerised facility to transmit to us the entire history of a planet in this group which could include its culture, physical make up of its inhabitants, climate, flora and fauna, atmospheric composition and scientific and medical accomplishments. It might even contain video and TV records to augment the coded data. Imagine the world shaking implications of this event! A great deal of our lives would never be the same again and a very considerable number of our learned fraternity would be forced to eat crow for a long time! If this probe originated from a very advanced civilization it would revolutionize our communication and transport system, electrical knowledge, astronomy, religious beliefs and a host of things that concern our daily lives. As the constellation of Cygnus is thought to contain one of the infamous "black Holes" this particular planet might no longer exist, nevertheless the probe's data would be intact and preserved for posterity.

In 1979 a brief tantalizing report appeared in several newspapers stating that a team of astronomers in Philadelphia had received odd and mysterious streams of neutrino pulses. These were first noticed in 1974 and had continued in burets for five years. A very advanced race on some far distant planet might use these emissions from a parent sun as a form of super communication, but at our present state of scientific development we are simply not capable of analysing these strange pulses.

There remain other possibilities however. To the layman some a little far fetched and touching on the supernatural. Nevertheless they have to be mentioned as what is strange today, tomorrow is commonplace. Extra sensory perception is one. This thought transferrence knows no time and space barriers and is instantaneous in operation. American and Russian research scientists have proved E.S.P. workable under strict laboratory conditions, but we are only probing the outer fringes of this novel form of communication between minds.

Another is the use of gamma rays with synchrotron radiation, but the danger and enormous cost is a serious deterrent in this field.

Stretching credulity a little more there is the little known potential known as transmogrification or more simply, the instantaneous transfer of matter from one point to another irrespective of the distance involved. This also has been proved under conditions that preclude fraud and on a very small scale in research laboratories. It involves changing an articles vibrational rate and molecular structure and then back again. The item under test will suddenly disappear and reappear possibly at another location. Einsteins Unified Field Theory in essence, covers this little known phenomenon and there are unconfirmed reports that the U.S. Navy delved deeply into this during World War 2.(2) If you possess an open enquiring mind that accepts paranormal activity, the countless proven cases of poltergeists around the world have this matter transferrence in abundance. Stones and other commonplace objects such as pottery, books and trinkets suddenly appear or disappear much to the consternation of the people involved. Although not exactly scientific conditions the fact remains that this phenomenon can and does occur and once it is fully understood, it could be the complete answer to space travel and communications. Researcher and authority John Keel maintains this is the secret of UFO's ability to appear and disappear at will, sometimes on military and airport radar screens.

All matter, radio, light and X rays and everything we are familiar with vibrates at its own particular rate or frequency. Included here are such odd things as radiesthesia, antimatter, clairvoyance, black streams, lay lines, cosmic rays, ultra violet light, gravity and magnetic fields and many more. They are all part of this giant spectrum of the electromagnetic and the vibrationary, but here we are venturing on strange and largely unexplored territory that to the ordinary conservative mind so preoccupied with our humdrum world of eight to five, income tax, politics and inflation that the latter part of this article smacks of mumbo-jumbo and the supernatural, but the author is convinced that in the decades to come it is in one of these unfamiliar segments of the electromagnetic spectrum that eventual space travel and possible communication with other world will be accompanied ...

G. MOWAT — XS5KL.

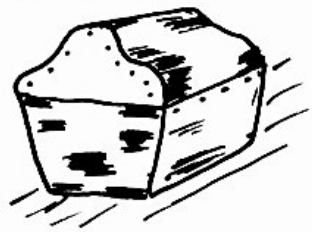
(1) Original article republished in Ap-March 1979, p.18.

(2) This is known as the "Philadelphia Experiment" and involved a U.S. Navy destroyer escort. An official wall of silence surrounds this alleged occurrence, but despite denials by the U.S. Navy persistent rumours continue to crop up over the years.

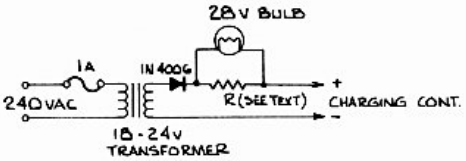
Have you checked your call-sign is correct on your AR address label?

The most basic charger circuit for "ni-cad" batteries consists of a more or less constant current source that will charge the things at what is called the ten hour charge rate. It is really the fourteen to sixteen hour charge rate, because that's how long it takes, because of inefficiency of the conversion from electrical to chemical energy. If you see 450 mAh marked somewhere on the battery, it means that it has a capacity of 45 mA for ten hours. It happens that this same current can be used for charging the thing, and it can be left on indefinitely without doing any harm to the thing. Indefinitely is a long time. I personally define indefinitely as several days.

JB's Junk Box Charger



If a certain element of risk can be assumed, ni-cad batteries can be charged at a much higher rate. It is actually pretty safe to charge them in four or five hours if you think they are pretty well run down when you start. Anyway, the purpose of this article was not to discuss the fancy charge circuits but just get off ground floor and cover some simple chargers and mechanical details of their construction.



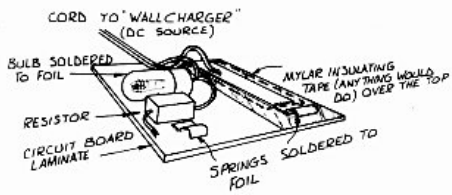
BASIC CHARGE CIRCUIT

Starting with the basic charger circuit shown, the charge current can be adjusted by juggling values of resistors and light bulbs to get the desired rate. The transformer should have high enough voltage to permit a lot of voltage drop across the resistor. This causes the current to be nearly constant, regardless of the terminal voltage of the battery. A "12 volt" walkie talkie may run with from 9 to 16 volts depending on the design. It is quite practical to make a charger stand that will handle various types of radios, even if they have quite different battery capacity. In the circuit shown, there is only one diode, meaning the charging current is only half wave rectified. It is OK to full wave rectify the thing, in fact, if you intend to operate the radio in the stand, I would recommend it . . . and filter it while you're at it, so you don't have to listen to any hum when the thing is talking.

I find it is a good idea to pick a light bulb that has high enough voltage to withstand a short circuit across the battery charging contacts because that's going to happen eventually. If you are using a 24 volt transformer and a 28 volt bulb, like a 1829, you will never have a problem. The reason for the bulb is simple. It assures you that the battery is actually charging.

MECHANICAL DETAILS

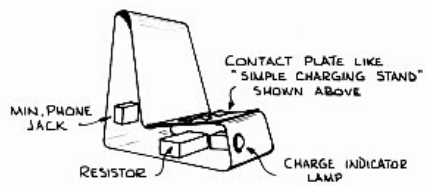
A charging stand can be simple or elaborate. The simple ones are sometimes the best because they don't take long to build. I think the simplest one I have is one that is made out of a piece of circuit board and is shown here. The thing that made it possible to be so simple was the wall mounted transformer I found in a flea market somewhere for a couple of bucks. The thing was capable of charging a 15 volt battery at 450 mA when the light bulb and resistor was shorted out so I used it to give my Motorola batteries a "quick charge" in the evenings, while out on the road. I mounted a tiny switch on the thing to short out the bulb, but I left it out of the sketch, for clarity. The resistor needs to be high enough wattage to not overheat. Figure the voltage drop times the current and use a resistor of twice that wattage rating.



SIMPLE CHARGING STAND

The foil was peeled loose where it wasn't wanted by scoring the boundaries with a knife, working the blade under the foil at an edge, and grabbing it with fine bladed slim nose pliers. If you are careful it will come off in one piece. If you are unlucky and tear it, just dig up an edge and try again. The springs came out of an old relay and appeared to be beryllium-copper which is excellent spring material and easily soldered. I'm sure brass shim stock would work OK, though it wouldn't be as springy.

The next level of sophistication is shown in the next figure. I got an artistic flair one day and decided to make a charging stand for my Genave walkie talkie, which in its day was quite a modern little radio. The only difference this charging stand has from the first is that it looks a little more complete. The part of the thing that has the charging contacts is just like the first stand, circuit board material, and all, so it is not shown in much detail in the sketch. Again, I used the wall mounted charger idea, but this time I put a little phone jack in the stand so the charger wouldn't be permanently attached.

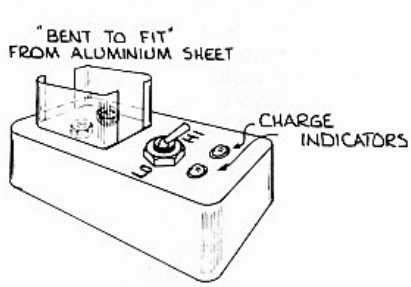


FANCIER STAND

There was enough room inside the thing to put a transformer and rectifier, but I never got around to it. One of the reasons for the shape of the stand was that it was simple to bend the aluminium. It didn't hurt that the radio was a little more stable leaning back on the stand.

I am actually going backwards in charging stand evolution at my house. As I get older, I find myself getting lazier. The next stand I will describe is the first one I ever built and it was for a 2-metre Motorola Handie-Talkie™ (HT-200, that is). Those things were heavy and required a more substantial stand or there was serious risk of breaking the floor if one fell on it.

This stand was built using a plastic utility box. The one I used had an aluminium cover but a plastic cover would have been fine. This thing was built before I found out how cheap a charging sleeve would be in a flea market. Since its original design was for a pretty big radio it has been adaptable to several different radios since.



FANCIEST STAND

There is nothing particularly clever about the stand or the sheet metal work, but I thought the charging contacts were cute so I thought I might as well include it.

CHARGER CONTACT

It is hard to make a big sketch of a charging contact but as you can see, the basis for this charging contact is a banana socket, which happens to be about the right size to poke a spring from a ball point pen inside. To be more exact, half a spring, as one was cut in two to make two charging contacts. It just didn't look right to have a bare spring for a charging contact, I put a dot of solder on the top. I guess I thought it should look like a flashlight bulb contact. I don't think lead is particularly good as a contact material, but it never seemed to complain.

There is no reason why a charger can't be made to work for two different types of radios by putting more than one set of contacts in the thing. The only considerations are whether there might be a short circuit with one radio or the other, and whether the batteries need different charge rates or voltages. As already noted, a constant current source can handle a wide range of voltages. If the batteries have different capacities, separate current limiting resistors, and even different light bulbs can be included for each radio. The bases of the radios may be of such a design that the charge contacts for one are located near non-conducting parts on the other. In my case, I was fortunate and could take advantage of the plastic cases being non conductive. On a pager, however, I had to add a little piece of mylar tape to the thing.

By the way, I don't remember mentioning it before but mylar tape makes about the most useful insulating material I have found. It is tough and has good insulating properties. The particular stuff I found is called book tape and is made by 3M. I found it in an office supply store. It has been valuable in insulating in close quarters of walkie talkies and is tough enough to resist ordinary abuse from cramming too many things in a small box. It can be cut by the sharp end of a cut-off wire stub but it is more resistant than most tapes. It has good adhesive properties, good enough to use as a protective film for things that are carried in a wallet. It certainly stands up in applications like the one shown in the first figure.

Joe K5JB from Collector-Emitter, Oct 82

AR

AN ILLUSION OF MEANING — OR A MATTER OF SEMANTICS

Alan Shawsmith VK4SS
35 Whynot Street, West End, Qld. 4101.

The occasion was the annual dinner and 'get together' of a very active A R and CB Club in a prosperous and expanding mid-west country town. The venue was the local RSL Hall and some three hundred amateurs, CBers, their families and guests were in attendance.

The ADGS — after dinner guest speaker — was a visiting amateur from the USA, who just happened to be in town. He was also a member of Toastmasters International, so who better to address such an assembly. However, what no-one knew was the fact that he was a compulsive 'spoofer'.

"Folks," he said on rising, *"I have been asked to address you on AR in the USA but instead I want to take the liberty to talk to you tonight about a social aberration that afflicts all of society and unfortunately has crept into our hobby. It applies to both sexes but is most obvious in males, because of our majority and aggressiveness. This social aberration is caused by the misuse of a bodily appurtenance which, if weilded wisely, can diffuse only warmth and satisfaction among us —but, it likewise fragments and spoils our togetherness if used irresponsibly."*

The American paused and smiled. He could see his audience didn't yet 'dig' what he was on about. He continued, *"We have quite rightly earned an international reputation for goodwill and intimate friendship second to none, yet this intimacy is being spoilt by the careless and often base use of what might be termed one of the most dangerous appurtenances of a man's body. This tiny piece of flesh can cause more hurt and suffering than anything else in our community."*

The buzz of conversation died in the hall and all eyes were now turned with curiosity on the speaker. *"As I said, our reputation is such that we should be most careful about the manner in which we conduct our social intercourse. Being communicators, we should strive always to set an example none can surpass, yet sadly we all too often exercise this tiny, potent piece of flesh with reckless moral abandon and for utterly selfish purposes."*

At this point one of the club's executive members was heard to whisper to another, *"Just what is this fellow really on about? Does he know where he is? This is an Amateur Club Dinner, not a strip joint in King's Cross."*

Undaunted, the Toastmaster forged on, raising his voice slightly as if working up to a climax. *"The wise use of this* ***appurtenance*** *not only cements relations, it brings warmth and enjoyment and the desire for more of the same. Sadly though, this art of sharing is often ignored and it is simply used as a tool of force and vulgarity; allowed to hang out loosely it makes a man look a fool and without it he is impotent."*

At this stage one of the Club Fathers, seeing the American was not yet in top gear — and fearful of what was to come, scribbled a note reading, *'Sit down, your pants fly is undone'* and passed it along to the speaker. This is the usual uncomplimentary clique given to an ADGS who has either outworn or outrun his allotted time and welcome. The American picked up the note, smiled indulgently and deliberately chose to misread the subjective noun.

"Ladies and gentlemen," he said, *"I have just been handed a note which reads 'Your* ***tie*** *is undone'."*

There was an immediate titter from some of the teenagers and young executives who straightaway got the point. At this juncture a mother was seen to hurriedly herd her young children from the hall.

"I would like to thank the writer for his observance and concern over my sartorial savoir faire but the state of my tie in no way inhibits the full and free use of the appurtenance of which I speak."

He went on in this manner for several more minutes explaining further the appendage was a weapon of great creativity, or destructive potency, depending on the manner of its use. Finally he paused and with a slightly dramatic movement pulled back his chair from the table and said, *"As the Good Lord has seen fit to endow me with a large, active and healthy appurtenance, I now propose to show you this piece of flesh so that you will understand exactly the implication of what I have been saying."*

All male eyes were now fixed on him as if he was about to do a 'Gypsy Rose Lee'. Many of the women blanched or blushed; some, in an effort to hide their embarrassment, lowered their gaze and went through the motions of rummaging in their purses. The less inhibited and more permissive teenagers who were gathered at the rear of the hall, began a stamping of feet en masse and gave short sharp whoops and handclaps of anticipation, hoping for an exposee that they really didn't believe would occur. Just for an instant the RSL Hall had all the atmosphere of a Kings Cross strip joint. From somewhere came a gasp and then a resounding crash — a YL had fainted and fallen amongst the crockery.

With a well-practised, slightly theatrical air the guest speaker climbed upon his chair and said, *"Ladies and gentlemen, behold the source of most of AR's trouble and mischief."* He flashed a toothy smile and poked out a large, pink, fat, healthy tongue.

AR

THUMBNAIL SKETCHES

Alan Shawsmith, VK4SS
35 Whynot Street, West End, Qld 4101

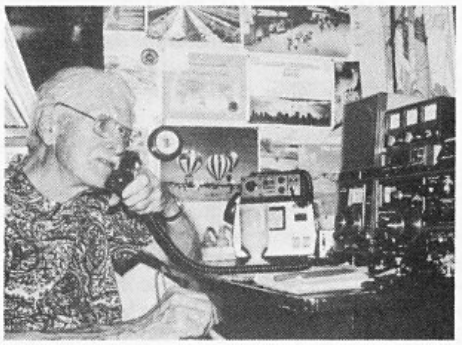
HERB SPRENGER, VK4ES — OOT of Rainworth, Brisbane

It would seem that once again the ubiquitous crystal set was the catalyst that set yet another amateur off on an electronics career spanning more than fifty years. As a high school student in 1930, Herb together with others was given a class project of building a crystal set. He quickly followed this with a series of battery operated valve receivers —all sole projects — and two years later the full amateur ticket (1932), taken in the country town of Kingaroy, Queensland. His first rig was a self excited oscillator (TNT or TPTG) on 40 metres using a receiver type battery valve, viz A415 — power input 2 watts. Receiver was an O-V-1 — Detector and one audio. Antenna ½ W zepp at 40 ft.

As a young man VK4ES wasn't letting the grass grow under his feet. Herb worked for several years as a Radio and B/Cast technician on Queensland's central coast before taking up the position of Engineer in charge of the Police Radio Communications system in VK4 in 1938. He retired from this position of responsibility in 1974 after thirty six years with the Boys in Blue. It goes without saying that the growth in this section of Police communications over this period was considerable indeed.

Within AR Herb maintained several interests. Like most of his contemporaries, homebrewing consumed a large part of the earlier activity until as late as 1968. DXing and ragchewing on both modes are now the main pastime. Herb, VK4ES is a member of the WIA. For the record, Herb says it was Claude Burns VK4ZY (now silent key), then Superintendent at the Kingaroy Telephone Exchange who urged him to obtain his ticket — over fifty years ago.

Outside the hobby VK4ES plays outdoor bowls and likes to travel. He spent two years caravanning in Europe and Africa.



RON JOHN GLASSOP — VK4BG

Presently of North Tamborine, Ron has had a most interesting and chequered career in amateur radio. He obtained his ticket in 1934 at Newcastle, NSW, so now has the rare and esteemed honour of being an *active* amateur for fifty years — something attained by only a few.

Ron's first call was VK2RG but, as the callsign was needed for a Broadcast Station, the PMG soon changed it to VK2RF. In those days he was a member of the Newcastle AR Club and its secretary for two years. In 1936 the Club staged Australia's Premier Hamfest; it was a resounding success. Other OTs may recall some of the members of this club, viz Alan VK2KB, Lionel VK2CS, Dave now VK4ZC, Harold VK2AHA, Jim VK2ZC, Ken VK2KG, John VK2XQ, Frank VK2UH, Bob VK2TY, Geoff VK2TN and Max VK2MS. The Club's first rig was the usual breadboard layout using a pair of 45s in a TPTG circuit. The tank coil was quarter inch copper tubing, the Rx was on OV-1 (probably the most popular set by far in those days), the sky-hook was a 40 metre Zepp which was erected vertically from a high office building next door to the Club — consequently DX results were terrific.

Ron was transferred to Brisbane in 1937 as a country Fire Insurance Inspector. This brought him into touch with a variety of interesting personalities. He took out the call VK4BG as a match to the one held by his cousin Bruce VK2BG (now SK). Like most amateurs he enlisted in the Army at the outbreak of WWII and saw active service for four years in Milne Bay, Lae, Pt Moresby and the Solomon Is; was OC in charge of W/OS in the 7th Australian Infantry Brigade Signals section. For those OTs who can remember these years, Ron says the equipment used was mainly No 11 Transceivers. By the way, Bill Chitham VK4UU was also in this same unit.

After the war VK4BG returned to his old job and took every opportunity while travelling all over the state to visit all the amateurs he could find (something most amateurs would like to do and be paid for it). Ron was next transferred to Maryborough, where in 1946 the Maryborough AR Club was formed. The first President was Gordon VK4GH and some of the notable members were Arch VK4CB, Alan VK4UH and Syd VK4SE (of La Balsa fame).

Since 1942 he has sent in a monthly Intruder Watch report and in 1981 he was awarded the "Intruder Watcher of the Year". Presently a member of the Gold Coast AR Society and for two years head of the Gold Coast 10 x 10 Chapter, he's still an avid DXer; present DX score is 284-296 in the Open and 275-286 on Phone.

At one time a Rotarian both at Maryborough and the Gold Coast, Ron is now a member of the local PROBUS Club for retired business men and is settled comfortably up in the clean air of Mt Tamborine. He enjoys bowls and giving talks on AR to the above mentioned clubs. As readers will agree, a long and rewarding career spanning more than half a century and something to look back on with great satisfaction — Congrats Ron.

AR

SPECIAL SPECIAL SPECIAL

This month take special notice and see if the information on your address label for AR is correct.

If it is incorrect please notify the Federal Office IMMEDIATELY.

This information is necessary for updating the 1984-85 Call Book.

Information to be amended should be sent to: WIA Federal Office, Box 300, Caulfield South, Vic 3162.

DON'T DELAY!!!

HOW TO . . . WRITE . . . dates, times . . .

That's easy of course. 20th January 1984 = 20/1/84 and 5 minutes past 4 = 4.05. Well now, is that correct???

First the date, as written in digits. WE know its 20th January 1984, but others would translate it as something impossible, because to them there is no 20th month on the calendar. And the time as we write it down, is it AM, PM and/or decimal time, UTC, local time, summer time or what . . .

Of course we could help those unfortunates out, by writing 20/1/84 and 4 h 5 min PM Aust Eastern Time, but that costs us more time, ink and/or pencil and thinking time.

So, since 1976 an International Standard was adopted (ISO 2014-1976) and somewhere there should also be an Australian Standard.

This standard is applicable ONLY to indicate a date in DIGITS, arabic digits at that and must follow a prescribed order: *year — month — day*.

The total date indication will consist of either eight or six digits, written as the one long number or each section separated by a (-) sign. The YEAR may be expressed in either four or two digits, preferably four as this will exclude any possible mistakes in determining an exact date. Month and day are ALWAYS indicated with two digits.

As an example, 20th January 1984 may be written as follows:

NORMAL: 20/1/84 or USA: 1.20.84 or 20.1.84
STANDARDISED: 19840120 or 1984-01-20 or 1984 01 20

The standardised method is, of course, the recommended one and with some practice you will be doing that automatically.

HOW TO WRITE DOWN THE TIME when using digits only

This is covered in ISO 3307-1975 and this is reasonably complicated because it covers the following combinations:

1 hours only
2 hours and a decimal part of an hour
3 hours and minutes
4 hours, minutes and a decimal part of a minute
5 hours, minutes and seconds
6 hours, minutes, seconds and a decimal part of a second.

I bet it comes as a great surprise to us, ordinary persons, that there are so many ways to indicate as "simple" a thing as t-i-m-e!!!

To complicate things a bit further, there are a number of DOs and DON'Ts . . .

If one expresses a time in a decimal format, then it is not allowed to have that followed by smaller time units. For instance, three and a half hours is just that, it can't be followed by minutes and/or seconds. Further, it is most advisable to use the 24-hour indication throughout, 01, 02 to 23 (2-digits only). Using the decimal unit, the two sets of digits must be separated by a comma (,) in the European method or a dot (.) in the English method, followed by a number of digits indicating the required tolerance. This sign (-) is not compulsory and, in any case, should never be used when "feeding" the information into a computer, but in this case a double-dash (:) may be used.

Minutes and seconds are always indicated by two digits, from 01 to 59. In decimal units, see the description on decimal hours.

MIDNIGHT is indicated by 000000, that's the start of a new day. The last moment of the *preceding* day is indicated by 235959, the last second of the day.

We all know the term "ZULU", indicating GMT time. Well, the Z for zulu still exists, but GMT does not. This has been replaced by UTC (Universal Time Co-ordinated) which is based on time zone Z, which so happens to coincide with the old GMT time zone, hence the term ZULU.

In case you did not know it, but the time zone code for Queensland (and in wintertime for the rest of the East Coast of Australia) is K for KILO, thus, if we wish to indicate local Queensland time, it must be followed by the letter K.

Some examples may either help you or utterly confuse you:
34 minutes and 53 seconds past 11 PM Eastern Australian Standard Time.

1 in hours — 23 K
2 in decimal hours — 2356 K or 23.56 K or 23,56 K
3 in hours and minutes — 2334 K or 23.34 K or 23:34 K
4 in hours and decimal minutes — 2334.88 K or 23:34.88 K or 23:34,88 K
5 in hours, minutes, seconds — 233453 K or 23:34:53 K
6 in hours, minutes and decimal seconds — 233453.0 K or 233453,0 K or 23:34:53,0 K

Let's make it a bit easier for us. Normally we would give the QSO time in hour and minutes, unless one wants to be extremely accurate, specially for EME or AMSAT work, but then one is clever enough to use the whole coding (and the rest that is following). But, for us normal mortals, the examples in 1 and/or 3 are suitable.

However, one must use UTC for DX cards (make it also a habit for local QSOs psel), thus our example of 23:34:53 K MUST be written on our DX cards as: 13:34:53 Z.

But don't despair if you have problems remembering the time difference and deducting it from your local time, read on further and thou shall learn.

COMBINATION OF DATE AND TIME

This will become fun and games, specially if the person on the receiving end hasn't got a clue what it all means, all those digits, could be CIA, ASIO or KGB codes, couldn't it???

Thus, to write down thirty four minutes and fifty three seconds past eleven in the evening (in normal Eastern Standard time) on the 20th January 1984, the following choices are available:

	OUR TIME	*UTC*
1	*19840120233453 K*	*19840120133453 Z*
2	*1984-01-20-23:34:53 K*	*1984-01-20-13:34:53 Z*
3	*1984 01 20 23:34:53 K*	*1984 01 20 13:34:53 Z*
4	*1984-01-20-23:34,88 K*	*1984 01-20-13:34.88 Z*

Hopefully you were still bright enough to comprehend that the last line indicated decimal time.

TIME DIFFERENCES

Most of us will have problems calculating K time in Z time, specially before OUR 10 AM. To overcome this problem and let the other guy do the work, all you have to remember is the difference between K and Z time, which for us in VK4 = -10 hrs. The summertime people will have to add another hour, thus their time difference becomes — 1100 hrs. Our example can thus be written as follows (without recourse to Z time):

1984-01-20-23:34:53 - 1000

Adapted from an article by W. H. Kerstens, PA0UHS, Oosterbeek in ELECTRON, 198402 by John Aarsse, VK4QA, Clontarf Qld on 19840201.

AR

QSP

MOBILE OPERATORS

Recently there has been some activity by the Queensland Police in stopping some vehicles fitted with two way radio transmitting equipment, to inspect written authority for the use of the equipment in the vehicle. For this reason the Queensland Division of the Institute recommends the following:

If you intend to mobile for longer than one calendar month, refer to the Regulations Handbook relevant section covering this situation and attend to the necessary requirement.

If less than one calendar month, carry in the vehicle a photo-copy of the current Station Licence.

As a precaution it is further recommended that you sign the photo-copy and have your signature witnessed by a Justice of the Peace who can also certify that the copy is a true reproduction of the original.

from QTC March 1984

AR

Our Magazine has a LARGE APPETITE.

Articles on amateur radio are always welcome.

MISSING LETTERS WITH THE TONO 9000E

Bruce Hannaford, VK5XI
57 Haydown Road, Elizabeth Grove, SA 5112

As a proud and satisfied owner of a Tono 9000E Communications Terminal I have at times been a little disconcerted by one small fault in its operation.

The fault consists of an occasional single missed letter when typing into the buffer memory. You correctly type the letter but it does not show on the screen and also is not transmitted.

A friend of mine Brian VK5BB was the first to notice that the fault was associated with the CR/LF signal on the upper screen display. That is, when the upper main part of the VDU display is doing a CR/LF a letter typed into the buffer at this time would not register in the buffer.

I then did a series of tests and found that the line feed signal was the culprit. To see if you have this problem with your Tono 9000E do the following test, just switch on the Tono and the VDU and proceed as follows.

Put the buffer on hold (ESC V on recent models or Shift V on early models) hold down the line feed key until you have say two lines of underlined letter "Ls" on the buffer screen, then release the buffer with ESC V and as the buffer drains out the line feed signals try adding some extra typing into the buffer. If the fault exists in your Tono the result will be a disaster with most of the letters typed failing to register.

I can vouch for the fact that this fault does exist in at least some of the early 9000Es with the light colour case and the recent models with the dark colour case.

I wrote to Tono Corporation in Japan re this matter and received a prompt and helpful reply. In non technical terms the trouble is due to the 9000E also being a word processor and as such needing the capacity to store many characters. When a line feed takes place many lines may need to be moved in a split second and additional information typed in at this exact moment may not always be recorded.

This is of course not much of a problem with touch typists as such normally watch the screen while typing and if a letter does not register on the screen would press the key again. However with search and peck typists who seldom look at the screen it may not be noticed until too late to correct it.

I suggested a way to dodge the problem would be to keep glancing at the VDU screen and not to type into the buffer while a line feed was taking place on the upper screen.

Tono have suggested two additional methods, firstly hold down the keys a little longer than .2 of a second (.2 = about 60 wpm which is certainly faster than I type) or secondly use the split screen VDU display as less memory is then involved and the problem largely avoided.

I like the split screen method and find it very successful in avoiding this problem.

Finally Tono sent me details of their new Theta 5000E communications terminal which is a very fine unit indeed. Very briefly it is a dedicated communications terminal not having a word processor like the 9000E. It sends and receives Baudot and ASCII RTTY and AMTOR ARQ/FEC. A tremendous range of speeds are available. It has a built in 5 inch green screen with provision for an external VDU, displayed on the screen is a time clock showing month, date, hour and minute (very handy for log keeping).

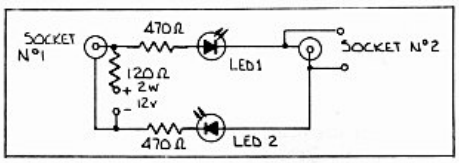
AR

TRY THIS

TESTING JIG FOR COAXIAL LINES

R Dowe, VK2RP
354 Pittwater Road. North Ryde. NSW 2113

After a session helping another Amateur look for shorts and/or open circuits in his coaxial feeders, I decided that there had to be a better method than holding test prods onto the respective plugs. Hence the following "Gimmick".



Plug one end of a coax line into Socket No 1 and the other end into Socket No 2 then: *(a) LED No 1 will light if the outer shield is OK; (b) LED No 2 will light if the inner conductor is OK; (c) A short circuit will extinguish BOTH LEDS.*

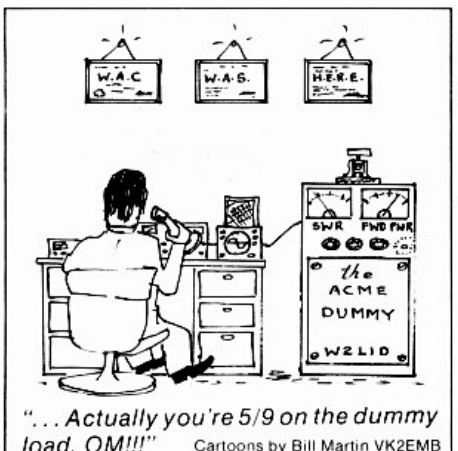
With both ends of the line securely fixed, it is a simple matter to pull, push, tug and bend the line to check for intermittent faults and the LEDs are far quicker than any Multi-Meter.

The sockets, of course, must be mounted on an insulated panel and various types (eg UHF, N Type, Belling Lee, etc) can be mounted in parallel to cope with the types used in your shack. Two terminals are connected across Socket No 2 for lines without plugs.

A line terminated by a Balun or Beta Match, when connected to socket No 2, will light both LEDs with reduced brilliancy.

The resistor values were chosen for a 12 V supply, but for 6 V the LED resistors could be reduced to 180 ohms and the power supply series resistor to 68 ohms.

AR



"...Actually you're 5/9 on the dummy load, OM!!!" Cartoons by Bill Martin VK2EMB

BACK PACK AMATEUR RADIO

Craig Paterson VK2NEU
31 Kent Road. North Ryde. NSW. 2113

On 20th January, 1984, Craig Paterson VK2NEU and friend Steve Monks, backpacked amateur radio equipment from the Thredbo chairlift to the summit of Mount Kosciusko, a distance of 6.5 km (13 km return).

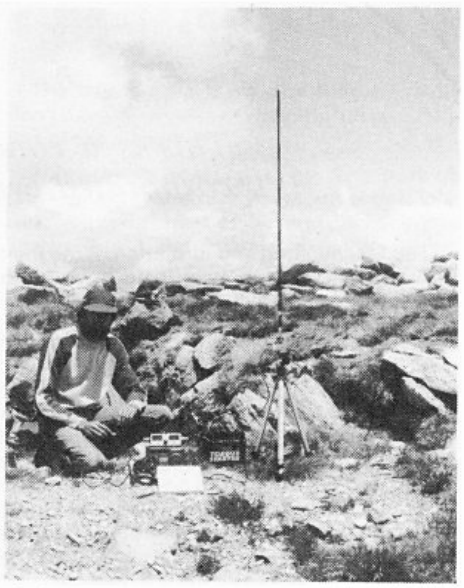
The equipment taken was a TS120S, SWR meter, MA5 mobile antenna and tripod, MC355 microphone, 12 Volt car battery and all necessary leads.

A portable station was set up and attempts were made for contacts on the amateur bands on the prearranged frequency of 3.565 MHz.

Contacts were made at 0030UTC with Col VK2BOP at Wisemans Ferry, Franklin VK2DYP portable at McMasters Beach and Les VK2VQV at Springwood. Conditions were not favourable on the 80 metre band at the time and signal reports sent and received were only 5x2.

Conditions were more favourable on 21.150 MHz and good contacts were made with Barry VK6MBM in Kalgoorlie, Jonathon VK6ALC and Laurie P29NLD.

AR



Craig VK2NEU on the summit of Mount Kosciusko.

Bill & the Project

Ted Holmes VK3DEH
20 Edmonds Street, Parkdale, Vic. 3195

Bill Blitheringtwit, somehow or other, managed to survive the storm created by the destruction of his power supply and the disruption to his wife's activities thereby engendered. Being plunged into total darkness every now and again, due to blown fuses, was, by now, accepted by her as part of her life style and Mrs. Bill had found that no matter what she said or what fuss she created her husband still carried on his merry way. He was like a battleship: he sailed on his inevitable course, no matter what, virtually unstoppable.

So now Bill was resolved to build another power supply. He couldn't do without one and was determined not to be reduced to buying one. He was definitely against black boxes. Amateur Radio was NOT about operating black boxes, in his opinion. It was about building things from junk, from items otherwise cast away and rejected. It was about creating things of beauty from the dross and leftovers in garbage containers. He had plenty of such containers, so he was sure he had enough junk at least to make a start. All he lacked were pass transistors and a few bits. For he had decided to go SOLID STATE.

This was a radical departure. He had always disliked — and never understood — transistors. However, he decided to have a try, at least. Amateur Radio was about having a go, wasn't it?

First step: to make a case. An old army ammunition box containing shrivelled beetroots resposed under the workbench. This would do. It was a bit rusty, but it could be cleaned up and repainted. There were plenty of tins of paint about, in all colours, ranging from white to purple. Some were liquid and others were solid, with brushes firmly embedded in them, like some kind of weird pot plant. One of the liquid ones would do: colour was not important. He also had a transformer. It had been used as a door stop for years but looked all right and would look even better when he had ripped off some of its rotting and loose frabric.

The heat sinks stumped him for a bit, until he lighted upon a piece of aluminium channelling lodged in the garage rafters. He could cut this up and drill it. He felt he was making good progress towards collecting the bits and pieces. There were plenty of knobs, miles of wire, swags of switches, etc., in dusty corners and these he assiduously gathered. A feeling of happiness came over him as he contemplated the task ahead. This was what AR was all about! The joy of anticipation at things to come, the creation of something, the ecstasy of completing the thing and finding that it worked!

However, at this stage he still had to visit a well known electronics shop and get a circuit board, a regulator, pass transistors and one or two other things. Many resistors and common components of some vintage lay buried amongst his own collection, garnered over the years and so there was no need to buy these.

Light in heart, Bill climbed into his car and headed off in the direction of Richard Smith's Electrical Store. Those unsuspecting workers at the store were pursuing their activities in happy ignorance of things to come.

AR

CLUB CORNER

DARWIN AMATEUR RADIO CLUB INCORPORATED

This is a condensed history of the Darwin Amateur Radio Club Incorporated, written by Henry VK8HA, the President of the club.

The first meeting and formation of the then "Darwin Radio Club" was held on the 7th November, 1966.

In those days there were not many resident amateurs in Darwin, so the amateur population consisted mainly of Public Servants from other states visiting for a three year term of duty. Some stayed longer than their initial term whilst others liked what they saw and are still in Darwin. They were a very enthusiastic and helpful group to their fellow amateurs and intending amateurs and this attribute was the start of the club and led to VK8DA, the club station and VK8VF the 2 m beacon.

Membership of the club always seems to vary between twenty five members and fifty but rarely does it climb to more than fifty.

Club premises and meeting places have always posed a problem and initially meetings were held in private homes, however over the years it has graduated to various educational establishments in the Darwin and suburban areas.

After securing a building on the East Point Reserve the club dry season meetings were held in the open, outside the club bunker.

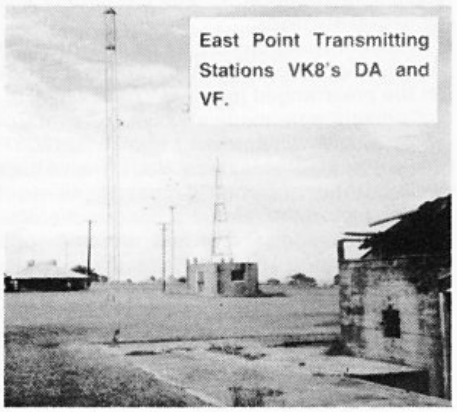
The first General Meeting of the club, the forty sixth, to be held on the East Point premises was on the 3rd August, 1970. As this day was a Public Holiday no business was transacted, instead antennas were erected at East Point and VK8DA was operated on air.

From March 1972 the club attained the use of the Civil Defence Headquarters on the corner of Sturt Highway and Parap Road and in return it was agreed that all club members should join the Civil Defence and also assist with radio communications in emergencies. Club members were also to participate in civil defence and emergency exercises which were held approximately three times per year. The club also had use of the Civil Defence Base Station transceiver (ex amateur band transceiver) for airing VK8DA.

During October 1972 VK8VF was operated on a test basis. During the same month the club name was changed from Darwin Radio Club to Darwin Amateur Radio Club and in November 1972 the new 52 MHz beacon was handed over by Peter VK8ZKA for continuous operation.

These headquarters were used as a meeting place until it "flew away" on Christmas Day 1974.

The 99th meeting held on the 6th January, 1975 had to be cancelled as only one member attended. The 100th meeting was then held on 1st February, 1975 with members VK8s KK, ZCF, HA, ZTW, CM, ZRD, ZCW, ZCJ and



East Point Transmitting Stations VK8's DA and VF.

Terry Hine now VK8NTA in attendance. Apologies were received from VK8s BB, AZ, KS, CEG, ZRD, ZBQ, DI and other members evacuated from Darwin. A good time was had by members and visitors with much discussion about how each spent the early hours of Christmas Day 1974.

From August 1975 the club had the use of the Civil Defence Bunker at the new address of the Civil Defence/Emergency Service Headquarters in Bishop Street. This bunker was cyclone and bomb proof but was very damp as it was underground. It also had a standby power plant which was very useful during the reconstruction of power lines after Tracey.

In February 1978 the club attained the use of the Casuarina High School for meetings as the Civil Defence required the bunker for their own activities. About the same time they were offered a one hectare block of land in the Berrimah area however it was impossible to accept this offer due to the cost of a club building, fencing, sewer, electricity and improvements to the block although the club did apply for a grant from the Northern Territory Government but were unsuccessful.

In 1979 East Point Club House was restored and in September 1979, Mr Dondas, the then Development Minister, officially opened VK8DA.

During the opening, members demonstrated their ability to make contact with almost any part of the world at any time, by using different bands.

Contacts were made with the President of the SA division of the WIA, many club members that had left Darwin after Tracy, most states in Australia and many overseas countries.

During 1982-83 the Department of Health Stores at Fannie Bay became vacant. Many sporting clubs got use of parts of the building and the club applied for a portion of the building to use it as a meeting place, lecture room, home for VK8DA etc and after much correspondence with the appropriate authorities a room was granted.

Various working bees were organised to paint the room and to clean up the club's portion of the garden. A 2 m Slim Jim is already erected and an application for the erection of an HF wind-up tower is still in the pipe line.

By the end of 1984 it is hoped that the club will be well established at Fannie Bay but in the meantime the East Point Club rooms are still being used for the 52 MHz beacon and is also the relay location of VK5WI Sunday morning broadcasts on 3.555 MHz. A new (old) AM transmitter has been purchased from the Department of Aviation in Darwin and it is hoped this will eventually be installed and used for relaying the VK5WI broadcast from Fannie Bay.

A 144 MHz beacon is under test and is housed on top of the Palmerston Water Tower, south of Darwin. Although not finished it is hoped it will be operational by mid 1984.

Amateur radio classes for beginners are conducted at Fannie Bay, and Morse code lessons are transmitted on 3.555 and 146.6 MHz daily at 1000 UTC. C90 cassette tapes are available from Henry VK8HA with Morse speeds up to about 20 WPM for the exchange of a cassette.

In early 1983 Bill VK8ZWM and a group of RTTY enthusiasts formed a RTTY group called "Territory Amateur Radio Teleprinter Society". This group record the VK2TTY broadcast each Sunday morning and an edited version with local news added is rebroadcast by VK8HA at 0915 UTC on 3.555 and 146.6 MHz. The club and RTTY group have applied for the call sign VK8TTY to be used for RTTY activities.

DARCI members have a net on Sunday evenings on 21.150 MHz with cross band operation on 146.6 MHz to cater for limited calls.

The club also issues two awards for amateurs.

Top End Award is available to all VK stations who work fifteen members of the club and one contact with VK8DA or SWLs who hear ten club members and VK8DA. Any band or mode is acceptable.

Applications to Henry VK8HA, Box 1418, Darwin, NT 5794 and include $1 for postage.

Bougainvillea Award is issued free to all amateurs and SWLs visiting Darwin during the festival which normally coincides with the Northern Territory Self Government Celebrations near the 1st July each year.

The requirements for the award is to work/hear/eyeball ten amateurs in Darwin during the festival and also see Henry VK8HA to collect the award.

AR

MELBOURNE PACKET RADIO GROUP

David Furst, VK3YDF
14 Airedale Avenue, Hawthorn, Vic 3122

The Melbourne Packet Radio Group meets informally at the Microcomputer Club of Melbourne (MICOM) CP/M Users Group meetings on the fourth Tuesday of each month in the Community Resources Centre at Burwood State College.

At present there are four members buying parts in order to get a packet radio network going in Melbourne. They are John Smelstorius VK3ZVR, Ian Clark VK3YRR, Peter Jetson VK3ZMB and David Furst VK3YDF.

The group thanks the Sydney Amateur Digital Communications Group (SADCG) and particularly Jim Swetlikoe of that group for all his help and encouragement. Jim was involved in the birth of Packet Radio in Canada in 1978 and has had much to do with setting up and running the Sydney group. At present they have an active group of nearly twenty people, a digital repeater, and a link into a Computerised Bulletin Board System.

JUST WHAT IS PACKET RADIO ANYWAY?

It is a method of transmitting data, without errors, from one amateur station to another across a radio network.

It's all done by packaging the information into "packets" (a packet is usually one ASCII line of text). A packet consists of three primary parts. The first part is an address. In this case usually the callsign of the station the information is being sent to. The next part is the actual data to be sent. The final part is error checking and correction information.

All the above is done by a smart box called a Terminal Node Controller (TNC) hooked up between your intelligent terminal and your two way radio.

The actual workings happen a little like this: You decide to talk to station VK3XYZ and ask your TNC to arrange this. Your TNC waits until no one else is using the frequency for a couple of microseconds then sends out a packet to the effect "VK3XYZ are you free?". If the other party is indeed free his TNC sends back another packet replying that he is free. Both TNCs then consider themselves connected to one another and will ignore any other packets floating down the ether, but will send addressed packets to each other and respond only to packets from the other. Just to be certain there are no misunderstandings each TNC will always acknowledge that it did in fact hear what the other said. From this you will see that each station only needs the radio channel for the few milliseconds it takes to send a line of ASCII text, and that the channel can be used by many stations effectively simultaneously.

WHAT MAKES PACKET RADIO SO GREAT?

It gives you data integrity, virtual connections, can route messages, act as a gateway to other systems and gets heaps of information from lots of people across just one radio channel.

It can be used for "chatting", interchange of programmes, dissemination of information, a gateway onto Amateur Radio Satellites and other packet systems (amateur and professional), playing games such as Space Empires, access to computers that people may choose to put "on line" and bulletin boards. The bulletin board could even have a phone link so that it could be talked to by people outside of the radio network.

The whole area is so new that we really don't have much idea of what the full possibilities of the system are.

This group's goals are to get a network up and running in Melbourne as soon as possible, followed soon after by a bulletin board service and a digital repeater sometime a little further on.

The chosen frequencies are 147.600 MHz for the main channel and 147.575 for a channel. These frequencies correspond with those chosen by the Sydney Amateur Digital Communications Group (SADCG). At present the 2 metre bandplan has these channels allocated to simplex FM and the chairman of the Federal Technical Advisory Committee tells us that there should be no problems with the use of them.

The protocol we have settled for is the VADCG protocol from the pioneers of Packet Radio at the Vancouver Amateur Digital Communications Group. We have standardised on this same protocol as the Canadians who invented Packet Radio and the (well established) Sydney group. It should be pointed out that protocols are NOT based on the circuitry, but on the programmes which run it, so if protocols should ever need to be changed, this is a blessedly simple thing to do. Radios used will most likely be Icom IC22s because of the fast turnaround time from transmit to receive. The Baud rate will be 1200 initially.

Anyone wanting more information is welcome to attend meetings as described above or contact the writer.

AR

COMMUNITY ACCESS RADIO 2NBC

2NBC-FM Stereo Community Access Radio's main aim is to inform the Community at large, of aspects of daily life activities and involvements within the Municipalities of Kogarah, Marrickville, Canterbury, Hurstville and Rockdale, NSW.

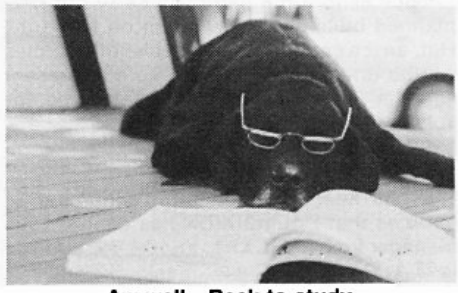
2NBC-FM Stereo is a non-profit organisation set up to obtain a licence and provide a Community Access Radio Station.

The Station is situated in the grounds of Narwee Baptist Church at 3 Gardinia Street, Narwee.

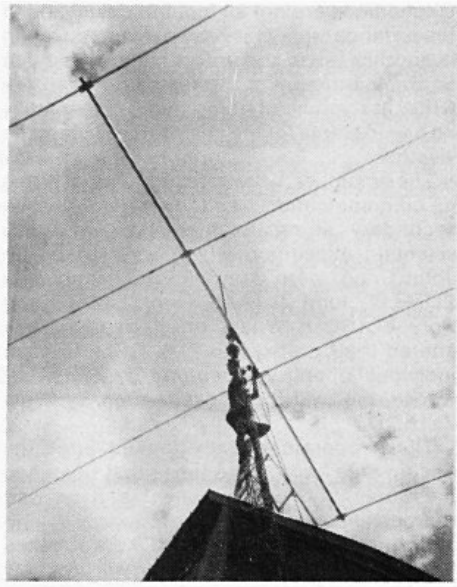
AR

AMATEUR ANTENNAS

Soupy rests before studying the Antenna Handbook.



Aw well – Back to study.



After all Soupy's study his master has that antenna in the air.

Contributed by Peter Alexander VK2PA.

HOW'S DX

Ken McLachlan, VK3AH
Box 39, Mooroolbark, Vic 3138

Conditions, though on the wane due to the solar cycle, have provided some good openings on 10, 15 and 20 metres at quite surprising times. There were some particularly good openings to Europe on all bands.

It is fitting that conditions have improved seeing that there was the Kermadec DXpedition, plus the actuation of more stations from China on SSB again. The Kermadec effort has cost a lot of money and organisation to get off the ground.

Raoul or Sunday Island, in the Kermadec group is about 1100 kilometres north of New Zealand and is a fauna and flora reserve. There is also a weather station operated by the New Zealand Government and Warick ZL8AFH is presently doing a twelve month stint of duty there. He can be worked on 20 and 80 metres when official duties are not too pressing.

The Kermadec expedition unfortunately struck serious trouble. They sailed out in a 16 metre ferro-concrete yacht, the "Shiner", which was its maiden voyage. This yacht, whilst anchored, was caught by the vagaries of the weather, a deep extra tropical low which produced very strong winds, and was sunk. The yacht was a complete loss but was insured for $NZ115,000. Fortunately there were no injuries or loss of life to either the scientific or amateur party.

The scientific party were only through half of their studies when the incident happened and it appears that the amateurs who paid for the charter will receive nothing of the insurance payout. This is going to be another expensive trip to provide fellow amateurs with a new country. At the time of writing these notes it was rumoured that a freighter was being diverted to pick up the stranded party.

It has been said before in these notes that DXpeditions are not all fun, but costly and at times dangerous. This has been proved again in another sense and unfortunately it will not be the last time. On the facts known to the writer at the time of going to press there was no one to blame for the misfortune, except the weather.

The amateurs, who were to primarily assist in communications and operate DX as a secondary string to their bow with the scientific expedition which was led by Dr John Craig, were Grey W6REC licenced as ZL0ALW, John ZL1AAS, Ron ZL1AMO and Roly ZL1BQD. Whilst on Kermadec they altered their prefixes to ZL8. QSLs to each individual operator except for Grey ZL8ALW whose log will be looked after by Roly ZL1BQD.

These operators really looked after the Pacific area and on the times that I listened their operating was excellent and beyond reproach in every respect.

On another note concerning DXers obtained from the ARRL Newsletter, which will probably be a big surprise to the most serious of DXers, is the acceptance by the ARRL DXCC Committee concerning the Spratley operation last year by DU1CK and group. This leaves the field open for further trips to that volatile area. Personal thoughts are that if there is any danger in actuating an area, as we have seen in the past, the area should be at least temporarily deleted from the countries list until a safe operation can be guaranteed.

NEW VATICAN AMBASSADOR

William Wilson K6ARO, has been nominated to serve as US Ambassador to the Vatican. It is not clear whether he will take a call out at the new posting. US ambassadors with amateur licences have always had the knack of getting permission to operate, such as Jim "Bull" Bullington N4HX who is presently signing 9U5JB and is constantly on the bands.

CALLSIGN REFORM

It appears that a callsign reform is taking place in the USSR which is effective from the 1st of this month and from all reports it appears that it will be quite complicated. I feel that all DXers will have some fun sorting this one out.

It has been intimated that all callsigns, the prefix will start with R or U and the second letter of the prefix will always indicate in which republic the station is located and the numerals 0-9 will be valid regardless of the station's location.

Bob W5KNE in QRZ DX gives an example *"In the Ukraine (formerly UB5, UT5 or UY5), under the new system, the following prefixes will be permissible: RB, UB, RT, UT, RY and UY with the numbers 0-9".*

This will take some sorting out from all amateurs and thanks Bob for your concise explanation.

EASTERN AND WESTERN CAROLINES

From a number of reports received it appears that these areas will be operated by a OM/YL duo later this year.

PROJECT BLIZZARD

Remember the mountaineers that ventured to Heard Island with VK0HI and VK0CW? The leaders of that expedition, including Bill Blunt, Dr Ross Vining, Jonathon Chester and Meg Thornton, are heading south again in November this year. This time the destination is Cape Denison, near Commonwealth Bay, in the Antarctic. They hope to follow the course of the "Aurora" in 1911.

Once ashore the party will carry out preplanned building conservation on Mawsons Hut, an ice cap traverse and scientific studies will be undertaken. It is not sure at present whether amateur participation will be involved.

QSL MANAGER CHANGE

It has been reported from a number of sources that Doug 3D2DX has changed his Manager from SM3CXS to VE5RA. His address is DA Renwick, Clavet Sask, SOK OYO, Canada.

SWL FRIEND WANTED

A note has been received from Sam Bittell, who would like to correspond with SWLs and amateurs in VK. Sam, an ex truck driver, is in his early thirties and disabled. According to Sam's letter he has a nice array of listening equipment.

Sam notes that he has a lot of spare time and all letters will be answered. His address is PO Box 1555, Alturas, 96100, CA USA.

NETHERLAND ANTILLES

Mike K3UOC, was scheduled to make a whirlwind trip through the Netherland Antilles last month. Mike would be using his call K3UOC/PJ2-PJ7 (whichever was the appropriate area).

All QSLs may be sent to Mike Manafo, 2419 Willow Street, Wesleyville, PA 16510 or via the W3 Bureau.

YL ON EASTER ISLAND

Lloyd and Iris made it to Easter Island and made many QSOs. They were operating under Lloyds call of W6KG/CE0. The Chilean authorities dropped the first suffix letters from their islands a couple of years ago. Iris said that they tried to get permission for an operation for San Felix but nothing was forthcoming from the authorities.

It is wondered if Iris is the first YL to operate from Easter Island? Their next stop was to be at Juan Fernandez where the same question comes to mind. All QSLs to Yasme.

It is not commonly known that there is a very attractive award available to SWLs and amateurs who can present proof with QSLs of having heard or worked thirty Yasme stations. These include all operations that have been under the Yasme banner as well as having worked any of the Yasme directors and officials past and present.

The award is free, something uncommon these days, and further details may be had by writing to the Yasme Award Custodian, W0MLY, RFD1, Perry, Iowa, 50220, USA with the courtesy of an SASE.

WARC BANDS FOR ITALY

The authorities in Italy have released the 18 and 24 MHz band and a 10 kHz segment will be made available for the 10 MHz band later in the year. Also the amateurs in Italy have been allocated a CW/SSB portion in the 160 metre band. The segment is 1.830-1.850 MHz except in Sicily where the segment is 1.830-1.845 MHz. The power limit is 100 watts.

CHAD REPUBLIC ACTIVE

Serge F6BFN/TT has been quite active on the nets as well as on his own. Serge has had some very good signals into VK. QSL to Serge Lebon, Le Caborot Garat, F-16410, Dignac, France.

PITCAIRN ISLAND

Tom VR6TC, has been very active on Sundays around 14.140 MHz with DL8FL at

0800 UTC and on Mondays around 14.180 MHz between 0500 and 0600 UTC speaking with ZL stations.

The planned development of Henderson Island, in the Pitcairn group, by an American consortium has been rejected by the UK Foreign Office. Kari VR6KY, unfortunately has not been heard on the bands for a considerable time now.

SABLE ISLAND

Various reports are to hand that Sable Island CY9SAB, presently operated by Wayne VE1CBK, will be heard quite frequently this year but unfortunately no prior notice will generally be possible. It will at least be easier to recognise this rare area by the distinctive callsign which has been allocated to all operations. QSL to the home call.

Wayne's equipment is a TS830, an ATU and a 160 metre inverted Vee which he carries to the island in a two engine aircraft which is landed on the beach. The flight from Halifax takes about 1 hour 20 minutes.

NO QSL BUREAU

Ezzat SU1ER and his daughter Magi SU1MR (Refer How's DX June 1983) write on behalf of the Egypt Amateur Radio Society (EARS) that there is no QSL Bureau in Egypt and all QSLs should be sent direct. (A complete list of Egyptian amateurs and their QTH is printed at the end of these notes.

Magi SU1MR is kept busy training her younger sister Sali to obtain her Novice licence at the next examination. If she passes, her callsign will be SU1SR.

Ezzat notes that the best time to listen for Egyptian amateurs is on Fridays and Saturdays around 14.280 MHz between 1600 and 2000 UTC.

LUXEMBOURG

One to put in the diary if you need this country. A Dutch team will be in LX land from the 20th to 25th June operating all bands and all models. The operators will be LX/PA3BXM, LX/PA3BZO and LX/PA3CII. The area is not new to them as they were there last year. QSL to the home call.

PROTEST

By all accounts, the Alaska DX Association has filed a letter of protest with the General Manager of the ARRL. The DX Association is protesting re the handling of their application for DXCC separate status for the Pribilof Islands. It is reported that their protest in part is concerned with the use of the so-called secret "Guidelines for Interpreting the DXCC Criteria in determining country status".

The closing paragraph in part states *"These guidelines were never published in QST, and in fact, were never approved by the Awards Committee or the Board of Directors . . ."*

Well it looks like they are not going down without a fight!

CANCELLATION

The Clipperton Expedition has been suspended because it has been impossible to find a suitable vessel after the initial chartered vessel did not arrive at the port of departure.

The group will try to find a more reliable charter and proceed with the earlier plans at a later date.

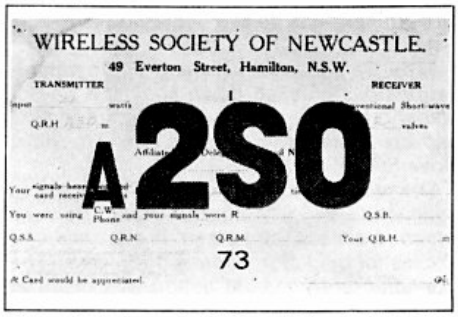
For further details please refer to Kip W6SZN detailed explanation in this issue.

VINTAGE QSL CARDS

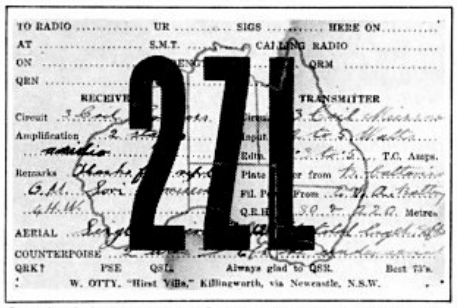
It has been my intention to reproduce some antique QSL cards in this section of the magazine but no suitable ones have been at hand. Max Austen VK2KZ has altered that by forwarding a fine set from his collection which I propose to print from time to time.

There must be many such collections held by OTs in this country which would be of interest to all readers and holders of cards prior to 1934 are invited to submit them for inclusion in this segment of the magazine. It is recommended that they be sent via Certified Mail, they will be promptly copied and returned to the sender by the same method that they are sent.

It would be appreciated if any stories concerning the cards could be forwarded at the same time.



The original card of Lionel Swain VK2SO–date is indistinguishable.



Card of the late Bill Otty VK2ZL. It is undated but a 11/2d stamp on the reverse side is franked September 1928.

MALI

Two amateurs are active from the Republic of Mali. One, Franz TZ6FE has been worked around 14.190 MHz at 1200 UTC. QSLs for Franz should go to DL4BC.

The other amateur is TZ9CY and has been heard around the same frequency and his QSL information is via N8US.

DELAY

The QSL cards for last year's St Paul Island operation by CY0SPI have not as yet been received from the printer. Have patience, they have not gone astray.

SARAJEVO

The special Winter Olympic amateur station in Sarajevo was 4N9OLY. All QSLs for this special card go to YU4EXA.

Other stations operating out of Sarajevo after the Olympics were 4N4GM, 4N4KW, 4N4LL, 4N4SA, 4N4TN and 4N4TS. QSLs for this group go to YU4TS.

NASDA CREW

Well known DXer Jimmy JA1AEA, is in the selection process for the NASA crew as a technician on one of the future orbital flights of Columbia. Jimmy was the 1969 Japan Aces of Aces winner and the author of the Japanese Quad antenna handbook. Good luck to you from all DXers Jimmy that you make that flight in the future.

CLUB STATIONS

It is becoming apparent that operators of Club amateur radio stations, particularly those in Europe, are trying to claim cards for the operator or operators of that station with one QSO from the Club call. This practice is blatently dishonest and is not conducive to good operating or the spirit of the hobby.

One such instance is of a German Adult College operating under the auspices of DARC legitimately claiming a VK0HI card. Later, two other cards turned up from two different operators claiming to be operating the Club station for the same contact with US currency attached. In no way did they receive a card and the German Society has been notified accordingly with photostat copies of the cards.

Over the years I have worked many club stations and the operator, if seeking a card, has called me under his or her own callsign and exchanged reports. I feel that this is legitimate and would be acceptable to the ARRL or any other society for DXCC purposes.

NEW PREFIX

It looks as if CR9 will be replaced by XX9 for Macao, to be effective immediately. It is certainly hard to keep up with all the prefix changes over the last couple of years but the prefix hunters are not complaining.

DESECHEO ISLAND

The expedition which was planned for the early part of this year was held over until the last week of this month, because there was a delay in the appropriate paperwork. The paperwork has been obtained, but there is the problem of additional funding to get the trip on its way.

LORD HOWE PREFIX CHANGE

Lord Howe Island in future will use the prefix VK9L. In no way is this a new DXCC country for you if you have worked any station there signing . . . /LH. Dick VK2AGT has changed his call to VK9LH. No advice has been received as to what call sign Ken VK2BKE, the local and only medico on the island has taken out.

Seeing that we have gone this far, it is my opinion that it would probably be sensible to make Antarctica VK0A, Macquarie VK0M and so on. The world would then be able to recognise the call area instantly.

SEALAND AGAIN

A DL group were at it again in the WPX Contest signing S1. It is not a new country which would be acceptable to the ARRL Committee, but a WWII gun platform jutting out of the sea off the English coast on a couple of cylindrical legs.

TUNISIA

The Italian national amateur radio society has received a letter from the Tunisian Ministry of Communications making the following points. *"1 Apart from a few*

temporary licences, the amateur radio service in Tunisia has been suspended since 1958. At the time of writing only 3V8PS has a genuine licence. 3 No TS8 prefix has been issued in Tunisia. 4 3V8AA and 3V8JYC (who both have Italian QSL Managers) do not have official licences." The letter goes on and asks the Italian society to contact the QSL Managers of these stations in order *"to stop these violations of international regulation which reflects badly on amateur radio".*

It is wondered what is genuine and what are fakes this day and age. The old adage of work them first and worry later still applies in my book.

CHINA

BY was on again, from two stations on SSB, including BY4AA which was participating in the WPX Contest, under the guidance of Tom VE7BC who has done so much to develop the hobby in that country. Tom makes frequent business visits to China and with the help of a number of USA stations has assisted with training, training aids and equipment.

The new station at BY1PK with the "Master" of the station Tong on the left and Tom VE7BC.

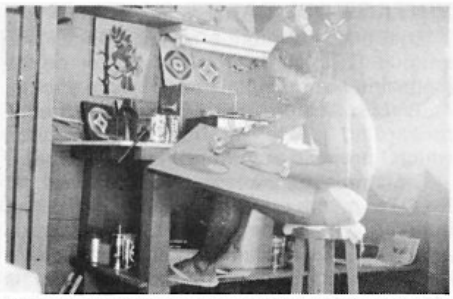
BRITISH CALLSIGN ALLOCATIONS

Have you wondered how the G callsign system works? I have on many occasions and Ken G3NBC has supplied the answers for your interest which are set out hereunder.

G2 plus two suffix letters Pre-war issued calls.
G3 plus two suffix letters Pre-war issued calls.
G4 plus two suffix letters Pre-war issued calls.
G5 plus two suffix letters Pre-war issued calls.
G6 plus two suffix letters Pre-war issued calls.
G8 plus two suffix letters Pre-war issued calls.
G2 plus three letters. Pre-war issued experimental licences which were given full licence privileges after the cessation of hostilities.
G3 plus three suffix letters. Full post war licences.
G4 plus three suffix letters. Full licence, current issue.
G5 plus three suffix letters. Full licence issued to non British operators in the UK.
G6 plus three suffix letters/T. Obsolete amateur TV. G6 plus three suffix letters now reallocated as Class B.
G8, G6 and G1 plus three suffix letters, Class B allocation. G1 is the current allocation.
G0 plus three suffix letters. Next Class A allocation (not yet issued).
GB2, 3, 4, and 0 are used for special event stations.
GB3 plus two suffix letters are used for VHF repeaters.
G7 and G9 not issued to the amateur service.
All the above apply to GD, GI, GJ, GM, GU and GW call areas.

Thanks Ken for explaining the system in the UK.

Ken who is an ardent DXer and consistent contributor to this column has had the duties of coaching his XYL Kitty for her licence examination last December. Kitty passed what she sat for and is now the proud owner of the call G1EOD. This year CW will be on the menu in the household and the ambition is a full call at the next examination. We will be waiting for that YL signal on twenty metres this year Kitty, good luck.



Socorro PY1EFM/PY0 at his other hobby, art.

BOOTLEG RADIO GEAR SEIZED

According to a report in the Indian radio amateur's journal Newsreel for February 1984, which is the official publication of the Amateur Radio Society of India, the Canadian Government has seized some bootleg radio gear.

"The Canadian Department of Communications has cracked down against a ring of illegal radio operators by seizing equipment and dismantling antennas in New Glascow, Nova Scotia.

The group, against whom the DCC acted, is believed to be the notorious 'Radio Raiders' which claims a combined membership in excess of half a million world wide. The Canadian enforcement action was taken in co-operation with similar activities in other countries and prosecutions are likely to follow.

On the air 10.5 metres conversation monitored by Westlink indicate that this is, in fact, the group named in the DCC action, and are illegals who operate both in and out of the amateur bands using modified amateur equipment, assigning 'callsigns' to themselves and even issuing their own QSL cards."

Well that might end some of the pirates from 10 metres by the next solar peak.

YL NET

The Indian YLs hold a net each Monday on 14.188 MHz at 1400 UTC. I am sure any VK YLs would be made very welcome.

There is also a general VU net on 14.150 MHz at 1530 UTC daily.

BRUNEI

The new prefix for Brunei is V85 in lieu of VS5. This has occurred since independence from the Commonwealth which was effective on the 1st January this year. The prefix change occurred after the celebrations which were held in February.

The problem of changing cards and awards could prove to be quite expensive to the amateurs and society.

EGYPTIAN AMATEUR QTHs

As there is no QSL Bureau in this country, the current list of amateurs is reproduced for those desiring a card.

SU1AA YL/ Iman Loutfy El-Mahdy, via; SU 1 AL
SU1AB YL/ Amal Loutfy El-Mahdy, via; SU 1 AL
SU1MI YL/ Mouna Ibrahim Mohamed, via; SU 1 IM
SU1MR YL/ Magi Ezzat Sayed, via; SU 1 ER
SU1AH Ahmed Hassan Ahmed, 40, El-Zahraa Str; Ein-Shams, Cairo.
SU1AL Loutfy Moursy El-Mahdi, 13, El-Giza Str; Giza or Box 109 Giza.
SU1AW Ahmed Wahbi, 13, Gamal El-Segini Str; New Nozha, Heliopolis, Cairo.
SU1AZ Atif Badr Zaki, 27, Ein-Shams Str; El-Zaitoun, Cairo.
SU1BA B A Bassiouni, Muqattam City, Cairo.
SU1CR Mohamed Shafie Reda, 50, Khedr El-Touny Str; Nasr City, Cairo.
SU1ER Ezzat Sayed Ramadan, 18, El-Abnasi Str; Manshiet El-Bakri, Cairo or Box 33 Air Port, Cairo.
SU1FR Fouad Said Reda, 13, Gamal El-Segini Str; New Nozha, Heliopolis, Cairo.
SU1IM Ibrahim Ibr Mohamed, 7, Roda Str; El-Roda, Cairo or Box 840 Cairo.
SU1KG Mohamed Hassan Shaltout, 29, Omar Ben El-Khattab Str; Pyramids, Giza.
SU1KH Mohamed Ahmed Rashed, 83, El-Mehatta Str; El-Zaitoun, Cairo.
SU1MA Abdel-Moety Attiya, 46, Omar Ben El-Khattab Str; Heliopolis, Cairo or Box 840 Cairo.

The actual 8I0WCY card. The QSL info in April omitted the 0. Apologies to all.

QSL MANAGERS

3A3EE-*F9RM*, 3D2FR-*NE4S*, 3D2HE-*VE3FXT*, 3X4EX-*N4CID*, 4N7WCY-*YU7GMN*, 4N9V-*YU4CA*, 4Z0DX-*4Z4DX*, 5H3SG-*KA3FIB*, 5R8AL-*WA4VDE*, 5T5RY-*F6FNU*, 5V7RE—*DJ5RT*, 5V7WI-*DL2WI*, 5W1DC-*DF7CC*, 5W1EJ-*W0NP*, 6Y5IC-*KE3A*, 6W8CC-*F6CVE*, 7P8DD-*G4GEE*, 8P6NX-*W0SAB*, 8Q7QA-*JA2VUP*, 9H1EL-*LA2TO*, *9U5JB-ON5NT*, 9Y4JW-*K2QUI*, 9Y4RD/4X-*KA2DDJ*, 9Y4RD/*SU-KA2DDJ*, 9Y4W-*N2MM*, A22IT-*DF8LY*, A35BG-*PA0GAM*, A92NH-*W8LU*, CE0AE-*WA3HUP*, CI3GCO-*VE3GCO*, CM2ER—*KB7SB*, CN8AN-*WD3DNA*, CN8AT-*OE3NH*, CN8CU-*WA3HUP*, CR9G-*PA0GMM*, DF3NZ/ST2-*DLBureau*, DL1VU/AH8-*DB5UJ*, DU1MEL-*K9MD*, FB6WJ-*F5RV*, FG7BP-*KA3DSW*, GB1BOY-*G4AAL*, HH2VP-*W1FJ*, HH2VR-*KA5V*, HH2WL-*KM7Z*, HH2WW-*N4WW*, JY1-*WA3HUP*, JY3ZH-*DJ9ZB*, JY5SK-*N4HCW*, JY8RF-*N5AU*, J28AZ-*I8JN*, J28DM-*F6GYU*, J37AJ-*W2KF*, J39BS-*WB2LCH*, JT1BG-*W7PHO*, KX6OH-*N6ABW*, LU1ZA-*LU2CN*, N5RM/C6A-*N5RM*, OH6XP/4U-*OH9OM*, ON6IZ/4S7-*ON6IZ*, OX3PT-*WA2TTI*, OX3SG-*LA5NM*, P29KY-*JR1EMT*, P29SO-*VK3BSO*, SU1RK-*DL5JP*, TG9NX-*N4FKZ*, TI9CCC-*TI2CCC*, TI9CF-*TI2CF*, TI9CRM-*TI2CRM*, TI9J-*TI2J*, TL8DC-*F6EWM*, TL8ER-*F6GQK*, VK0CK (6m contacts) *VK5LP*, VK9ZW-*VK6YL*, VP9AD-*W3HNK*, VU2JXO-*WB3TLB*, W2BBK/PJ7-*W2BBK*, XU1KC-*JA1HQG*, XU1SS-*JA1HQG*, XU1YL-*JA1HQG*, YB0ARA-*K6DLV*, ZK1XL-*ZK1CG*,

ADDRESSES YOU MAY NEED

3D6AL	PO Box 64, Manzini, Swaziland.
4M7QP	PO Box 411, Margarita Island, Venezuela.
5N1ARY	PMB 5184, Ibadan, Nigeria.
5W1DQ	G Fuller, 79 Wooley St, Christchurch, NZ.
5W5DQ	G Fuller, 79 Wooley St, Christchurch, NZ.
5Z4DA	PO Box 30137, Nairobi, Kenya.
5Z4GM	PO Box 57056, Nairobi, Kenya.
8P6QI	PO Box 167, Bridgetown, Barbados.
8P6QZ	PO Box 408, Bridgetown, Barbados.
8Q7AC	PO Box 0207, Naifura, Maldive Republic.
9Y4WCY	PO Box 1167, Port of Spain, Trinidad.
A22CA	PO Box 29, Selebi-Phikwe, Botswana.
A6XSS	PO Box 6200, Abu Dhabi, UAE.
C31MO	PO Box 164E, Principality of Andorra.
C53EK	PO Box 596, Banjul, Gambia.
FB8WK	PO Box 190, Mazamet 81200, France.
FG7CH	PO Box 276, Basse-Terre, 97100, Gaudelope, France.
FR7DA	PO Box 1222, 97400, St Denis, Reunion, France.
J21C1	PO Box 1891, Djibouti.
J28DN	PO Box 1724, Djibouti.
J28DP	PO Box 2417, Djibouti.
J28DX	PO Box 1076, Djibouti.
HH2MC	PO Box 1404, Port au Prince, Haiti.
TA1SU	PO Box 531, Aksaray, Istanbul, Turkey.

WORKED ON THE EAST COAST

28 MHz
EA4BZ, JA3EY, JA3GZ, K1YR, K6DN, OK1MP, SP3DO, UA0LX, UK7LXX, VE6YK, VE7DB, VU7GT, W6HLA, W6HYY, WA2CZE, WA6DBC, YB5ASQ, YU1TT, YU4SS, ZL1BYW.

21 MHz
9J2BO, 9V1TL, JA3OL, Y52WG, ZL8BQD.

14 MHz
1Z9A, 3D2AA, 3D2HE, 3V8PS, 3X4EX, 4N4GM, 4N4KW, 4N4LL, 4N4SA, 4N4TN, 4N4TS, 4S7CF, 4U1ITU, 5T5RY, 5Z4DE, 6Y5NP, 7P8CL, 7X2BK, 8P6FW, 9H4E, 9K2SA, 9U5JB, A4XJQ, A4XRS, A71BJ, A71BK, A92DT, AH9AB, BY1PK, BY4AA, CE2CC, CT1RK, CT2CR, CX7BY, EA9BC, F6BFN/TT, FB8WJ, FK8EB, FO8GN, FO8KS, G8GRN/5X, GW3NNF, H44IA, HB9BGN, HR1FC, HZ1AB, I8SAT, J37AH, JH3SUV, JJ2YV, JT1AR, JT1BR, JY5CH, JY5FT, KG4DX, KP4AWI, KX6PO, LB1VC, LU1KGN, LZ1AB, OD5SM, SV5TH, T2GSH, T30CH, TL8ER, UG6GAF, UJ8JCT, UW3UW, VK0CK, VK2AGT/LH, VK3XTH/VK0, VK9ZW, VP2KPZ, VP2MF, VQ9GE, VR6TC, W6KG/CE0(IRIS), W6KG/CE0(LLOYD), WA3HUP, XT2BR, YK1AA, YS9RVE, Z8AFH, ZC4EPI, ZD9BV, ZK1DA, ZL8AAS, ZL8BQD, ZP5CCG.

7 MHz
5W1DC*, CE0AE, F5VU, HH2VP*, HH7PV, HL50C*, HZ1AB*, KX6DS*, NF7R/NH2*. * denotes CW operation.

INTERESTING QSLs RECEIVED

A35MJ, A71BJ, CE3DPD, DF7WCY, G4DUW/DUI, ZL7OY.

CW SWLING WITH ERIC L30042

28 MHz
JR6GIM/2, JI3ACL, P29PR, UA0JFL, VE6OU, VE7SR, VK8XX, VK9NS, VU2JXO, KA7BNP, W7LFV, WB7RNB, YB5ASO, ZL1AIZ, ZL2AGS.

21 MHz
DU1PLM, G3ARS, HL0CBD, JQ1FEF, JA7WWH/JD1, KB6DAW/KH2, KX6AX, P29PR, PP8GW, UL7JAA, VK8XX, VK9NS, XU1SS (1000 z), YB0ARA, YC1DVW, YC0VM, ZL3GQ, 5W1ER, 9V1TL.

14 MHz
A4XJW, N5RM/C6A, KF6ME/DU2, IS0PEC/EA2, EA9JV, FM7WO, F6GKB/FO8, G3XBY, GD4AM, HH2VP, HZ1AB, JT1BR, JY5MS, KG6AAY, LU9HBJ, LX1YZ, LZ2HA, P29PR, PJ3JB, T30AT, TI2ARG, VK9NS, VS6JH, YB2ARH, YS1GMV, ZK1XL, ZK2BW, ZM7VLI, 3D2DX, 4S7IC, 4Z4DZ, 5W1EJ, 6Y5HN, 9V1TL.

10 MHz
N5RM/C6A, DJ9GD, EA8AFB, F3NB, FK0AQ, G40TU, JA1ADN, JA6HW, LX2LH, VK4AKX, VK7VA, W1PXA, KM3A, AB6U, ZL3AAM, ZM7VU, 5W1DC.

7 MHz
CN2AQ, DL6WD, EA5AAQ, F6FTI, FG7BP, G3RRS, HG5A, HL2ARR, I5EFO, LX1PD, KP2J, P29KY, UK2FBR, UK8EAB, VE6OU, VK9NS, VP9AD, VU2SDX, WH6R, YB200, YU1CCJ, YV5ANT, ZK1XL, 3D2HE.

3.5 MHz
FK8EJ, HA6KOA, HA7KCG, HA8KQX, HZ1AB, JA1CGM, OK1ANG, OK2BCI, OK3YX, SM6CPY, UA3ECF, UK6ADT, UA9JDK, UB5INO, P29PR, YD9VG, KX6DS.

1.8 MHz
VK2BHO, VK3PL, VK5KO.

THANKS

Thanks are extended to such magazines as OZ, WORLD RADIO, RADCOM, QST, cqDX, VERON, INDIAN RADIO AMATEURS NEWSREEL and weekly and monthly newsletters including DX NEWS, QRZ DX, LONG SKIP, RSGB NEWS BULLETIN, ARRL NEWSLETTER, KH6BZF REPORTS and JAN and JAY O'BRIENS QSL MANAGER LIST which have provided the writer with invaluable information. Australian amateurs who have contributed include VKs 2KZ, PS, KMH, 3BY, FR, YJ, YL, 6FS, NE and L30042. Overseas amateurs included I8SAT, G3NBC, SU1ER, SU1MR, W6SZN, JH1KRC, VE7BC, ZL1AMN and ZL1AMM. Sincere thanks to one and all and good DXing.

1984 Clipperton Island Expedition

G Kip Edwards W6SZN
1928 Hillman Avenue, Belmont, CA 94002 USA

By now, you have all probably heard that the 1984 expedition to Clipperton Island did not make it to the island. Because of the worldwide interest in this expedition, I am writing to inform the DX community of exactly what happened.

First, some background information. Planning and organization of this expedition began over two years ago. Once the landing permission and license were obtained, the effort necessary for a 14 operator, 6 transmitter multi-national expedition became almost a full-time job. Literally thousands of hours and dollars were spent by the operators to ensure a safe and successful operation.

In early November, we signed the charter contract for the Svanen, a 90 foot sailboat. The boat was then in Venezuela, leaving it more than sufficient time to arrive at Acapulco for the 5 March departure.

At the end of January, we learned that the Svanen had encountered serious engine trouble and would not be able to make the trip. As a result of this news, our charter agent began an intensive search in Mexico for an alternative boat. In mid-February, we located the Black Eyes, a 92 foot steel hulled schooner. The boat was then in Panama and we were assured that it could arrive in Manzanillo by 5 March. Based on these assurances, DJ9ZB, F6GXB, F9LX, FO8IW, FO8HL and FO8GW left their respective countries and arrived in California on 1-3 March.

On 2 March, we learned that Black Eyes had been delayed by a few days but was expected to arrive in Manzanillo on 10 or 11 March. We delayed our departure from California for a few days and left for Manzanillo on 8 March, arriving that night.

After making arrangements in Manzanillo to obtain the last remaining items for the expedition, we began the long wait for Black Eyes. The boat had not been in communication with the charter agent (or anyone else) for several days and we were left to guess when it might arrive.

On 12 March, with no news about Black Eyes, we began our search for alternatives. Over the next six days, we scoured the Mexican coastline for suitable boats but none was found. We had numerous meetings with the Mexican military, with representatives of Productos Pesqueros Mexicanos, a state-owned fishing fleet, and with owners or skippers of private boats but suitable arrangements could not be made. The six days were an emotional roller coaster for the operators, as one boat after another initially appeared suitable and available and then fell through.

On 14 March, we learned that Black Eyes was about 200 miles south of Acapulco (550 miles from Manzanillo), becalmed and with a busted engine. On 16 March, FO8IW and FO8GW flew to Mexico City to discuss the matter with officials of the French Embassy and with members of the Mexican Amateur Radio Club. They returned on 17 March with news of our last chance: a 120 feet motor sailer named Sara Lee that was supposedly located somewhere about 75 kilometers north of Manzanillo. Six of us piled into a small car and spent the day searching every bay from Manzanillo to a point about 100 km north. No boat was found. With no other alternative, we returned to California on 18 March, bitterly disappointed.

Even before leaving Manzanillo, we began discussing another expedition to Clipperton. Those discussions are continuing and details will be distributed to the DX community as they are worked out. We will be writing individually to those who contributed to the expedition, offering the full refund of each contribution. While we hope that those who contributed will elect to leave their contributions in the Clipperton fund for the next attempt, we have no guarantees at this time that there will be another expedition, at least in the near future.

The Clipperton expedition operators wish to express their sincere appreciation to all who supported our efforts.

AR

We're No.

CAT. System All-mode FT-757 GX Transceiver

Here's the one you've been waiting for. And waiting! They've been so incredibly popular we've hardly been able to keep up with the demand! As Amateur Radio Action said in their January 1984 issue "Without modesty the best transceiver of 1983".
Have a look at one and you'll see why its tiny (just 238 x 238 x 93mm!) but packs a 100W continuous output with its internal forced air cooling. Continuous coverage receive, all WARC bands, ALL MODE, (yes, FM is included, not an option) PLUS 8 memories, twin VFO's, computer aided if you wish. . . . its features are simply far too many to list here. Check out the ARA review above if you don't believe us (copies available on request).

Cat D-2940

Specifications:
- **All mode, All HF band (inc. 160m)**
- **100W continuous (SSB/CW/FM) output.**
- **Twin VFO's & 8 memories, with full transfer & switching.**
- **Triple conversion receiver, 0.5 - 30MHz.**
- **0.25uV sensitivity 1.5 - 30MHz SSB.**

$1075

*Computer Aided Transceiver

Hurry! Stocks are limited!

RS-232C INTERFACE

$99

Use your own micro to control the VFO frequency, memory functions etc. Just plug it in - it's exceptional!
Cat D-2943

LATEST COMPUTER TECHNOLOGY!

ANTENNA COUPLER

$399

Wow! Uses its own micro to automatically work out which band you're on and tune the antenna to it! Yes, it's even possible to pre-tune on receive while you're on another band! This is one piece of gear that's absolutely amazing: see it to believe it.
Cat D-2942

It's fully automatic!

YH-2 Headset Speaker Mic

For complete hands-free operation - even has VOX system (with FT-230!) One piece headphone for driving safety, boom mic.
Cat C-4200

$29

MH12A2B External Speaker Mic

For mobile or desk operation. Plugs directly into FT203R, can use external PTT.
Cat C-1112

$39

ECONOMY 2m HAND - HELD FT-230R

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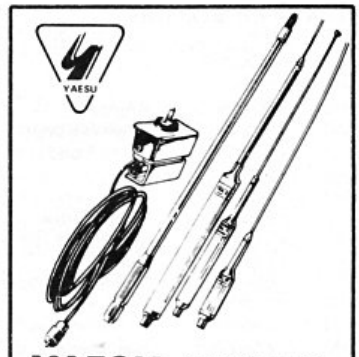

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AMATEUR BANDS BEACONS

FREQ	CALLSIGN	LOCATION
50.005	*H44HIR*	*Honiara*
50.008	*JA2IGY*	*Mie*
50.020	*GB3SIX*	*Anglesey*
50.060	*KH6EQI*	*Pearl Harbour*
50.075	*VS6SIX*	*Hong Kong*
50.945	*ZS1SIX*	*South Africa*
51.020	*ZL1UHF*	*Auckland*
52.013	*P29SIX*	*New Guinea*
52.150	*VKOCK*	*Macquarie Island*
52.200	*VK8VF*	*Darwin*
52.250	*ZL2VHP*	*Palmerston North*
52.300	*VK6RTV*	*Perth*
52.310	*ZL3MHF*	*Christchurch*
52.320	*VK6RTT*	*Carnarvon*
52.350	*VK6RTU*	*Kalgoorlie*
52.370	*VK7RST*	*Hobart*
52.420	*VK2RSY*	*Sydney*
52.425	*VK2RGB*	*Gunnedah*
52.440	*VK4RTL*	*Townsville*
52.450	*VK5VF*	*Mount Lofty (1)*
52.465	*VK6RTW*	*Albany*
52.470	*VK7RNT*	*Launceston*
52.510	*ZL2MHF*	*Mount Climie*
144.019	*VK6RBS*	*Busselton*
144.420	*VK2RSY*	*Sydney*
144.465	*VK6RTW*	*Albany*
144.475	*VK1RTA*	*Canberra*
144.480	*VK8VF*	*Darwin*
144.550	*VK5RSE*	*Mount Gambier*
144.600	*VK6RTT*	*Carnarvon*
145.000	*VK6RTV*	*Perth*
147.400	*VK2RCW*	*Sydney*
432.057	*VK6RBS*	*Busselton*
432.410	*VK6RTT*	*Carnarvon*
432.420	*VK2RSY*	*Sydney*
432.425	*VK3RMB*	*Ballarat*
432.440	*VK4RBB*	*Brisbane*
1296.171	*VK6RBS*	*Busselton*

(1) VK5VF has been testing on its new frequency so will probably be operational by the time you read this.

MELBOURNE NEWS

Doug VK3UM advises his 2 metre activities for February were mostly confined to Saturday mornings, starting off on 4th February with contacts to VK3AOS, VK5DJ, VK2ZAB, VK1CJ, VK1BG, VK1KAA, VK1RK, VK2YEZ, VK2QP, VK2DFC with VK2YEZ and VK2DFC on 70 cm as well. 5th February: VK2ZAB — nobody else. Doug wondered if all the others from the day before had been celebrating too well on the Saturday night!

11th February: Very hot conditions, noise horrific! VK1CJ. 18/2: VK3AOS, VK2ZAB, VK1CJ, VK1VP, VK1RK, VK1BG (VK5DJ slept in!). 24th February: VK5DJ, VK2ZAB, VK1ZIF, VK1BG, VK1RK, VK1CJ, VK1VP and VK2ERT(??). The latter he was not sure of as all was copied except QTH and call. Aircraft type enhancement of propogation.

On the EME side of things Doug worked the following: 16th February: K6MYC/KH6 being an EME Dx-pedition to State 50; 17th February: SM2GGF (failed to complete with SM7BAE and JA0JCJ; 19th February: WA6MGZ. He suspects heavy "E" during skeds with SM7BAE, KB8RQ, N6AMG and W7IUV was responsible for poor signals. However, Doug was pleased to pick up another two countries. He said QRM from European stations after the sked with SM2GGF was incredible when he called CQ!! Hence he ran out of moonset time.

Others may be interested that Doug is looking to erect a bay of 16x16 antennae for 70 cm, hopefully fed with hardline and requires 41 connectors! Gain should be between 25 and 26.5 dB.

Doug has received a QSL and photo from SM2GGF which shows an array of 16 x 22 foot yagis (4x4), which must be around 45 x 45 feet. It is fully steerable on a massive tower and H frame! Even Doug admits this structure would dwarf his 16 antennae on 70 cm.

THE WEST IS ALIVE

Wally VK6KZ sent a letter which was just too late for last month's deadline, but what it contains is interesting and quite relevant for this month.

"Sorry I couldn't work you from Walpole when I was down there in January, but conditions were generally very poor; however, it was interesting to compare the path from Walpole with that from Albany to Adelaide. On 20th January I was able to work Bob VK5ZRO on both 144 and 432 MHz but Wally VK6WG in Albany had a lot of difficulty in hearing him whereas the next day the situation was reversed. The absence of the Adelaide 2 metre beacon did not help!

"My main activity since the Ross Hull has been on 3.5 GHz. Don VK6HK and I are now exploiting tropospheric propogation since WA does not have kindly placed high mountains for line of sight propogation. The attached information re activity on the 3.5 GHz band explains the situation." Now follows details of two outstanding contacts made on that band which are the subject of a new Australian SHF Record Claim.

13th January, 1984. Time 0910 UTC. Frequency 3456.2 MHz. Mode: VK6KZ/P on FM and VK6HK CW. Reports from VK6HK 5x6, to VK6HK 529. VK6KZ/6 was at Busselton and VK6HK at Wembley Downs in Perth, distance 199.8 km.

26th January, 1984: At 1212 UTC from the same two locations the same stations exchanged two-way phone reports with VK6KZ giving 4x1 and receiving 5x8.

28th January, 1984: At 1043 UTC, on 3456.2 MHz between VK6KZ/P and VK6HK over a new distance of 205.7 km, reports from VK6HK 5x5, to VK6HK 519.

Equipment used at VK6HK: *Homebuilt transmitter with varactor multipliers 384/1152/3456 MHz with about 1 watt output. Receiver MGF1400 GaAsFET pre-amplifier, 1N23WE diode mixer in an inter-digital converter with 144 MHz IF Antenna: 30.5 metres mix of RG213 and HM8 coax to 1 metre dish, log periodic multiband feed approx 23 metres above ground.*

VK6KZ/6 at Walpole had a home built transmitter with varactor multipliers 384/1152/3456 MHz with approx 1 watt output. Receiver a 2 stage pre-amplifier using NE64535/NE57835, with 1N23WE diode mixer in an inter-digital converter with 144 MHz IF. Antenna 2.5 metres RG8 coax to 900 mm dish with log periodic multiband feed approx 4 metres above sea level.

Congratulations to both operators who have certainly been setting the examples in home-brewing and getting the results. We hope the claim for the Australian record is approved leaving you free to try on bands further up the scale. On this point I note they are currently trying 5.7 GHz!

FROM MELBOURNE ON SIX

Geoff VK3AMK sent for his VK0CK card and mentioned the just concluded Es season had been remarkable, the best every way you look at it. 6 metres: Es excellent, very reliable and four new countries worked, viz JD1, A35, ZL7 and ZL9. 2 metres: Remarkable, even though Geoff was unable to participate. He mentions the FM broadcast band, as expected, was a very interesting indicator and giving some excellent openings, but identification of stations is often difficult, particularly with the ABC.

Geoff puts in a plea for anyone knowing how to get a card out of A35GW because it so far seems impossible! Several have tried more than once without any success. *Sorry, I cannot help, have not been fortunate enough to work him so am not faced with such frustrations . . . 5LP.* Geoff concludes by sending in an update for his 6 metre standings list.

THE SOUTH AUSTRALIAN ACTIVITY

Its been a while since we got specific about what has happened here but following the excellent openings on both 6 and 2 metres particularly during December, one might be excused for thinking activity might stop. It hasn't.

Bob VK5ZRO has come to my rescue and filled in some of the blank spaces in my log. First we want to mention his contacts with Wally VK6KZ/6 at Walpole on 20th January at 2210 on 2 metres with 5x7 reports and on 70 cm at 2230 at 5x2. As Wally reported earlier, Bob was not able to work Wal VK6WG at Albany at this time, but next day it was 4x1 to VK6KZ/6 on 2 metres at 0905, but this time he was able to work VK6WG on both 2 metres and 70 cm. Also VK6DM.

After that lot, Es openings were still occurring with some regularity, 22th January: 0035 VK2DDG VK4ALM, and at 0840 VK6ABR and VK6RO 5x9. Further 6 metre openings occurred on 25th January 0820 to 0955 VK2BHO, VK1ZAG, VK2BA, VK2YVG, all 5x9. On 26th January at 1150 VK1ZQS, VK2KAB. 28th January was a good day, starting at 0030 with ZL1AKW, ZL2TPY, ZL1ADP, ZL1TOP and ZL1AON with signals to 5x9. A lonely

VK4YLG at 0200. 29th January: 2155 VK8ZLX, VK4AJL and VK5LP on backscatter! 31st January: 0925 VK7KJ and VK7ZAR.

Things went a bit quiet until 9th February when 144 and 432 MHz contacts were made from 0715 to VK6WG, VK6KJ, VK6WG, VK6XY and VK6BE on 144 only. At 1225 VK5KMW at Ceduna 5x6. On 12th February 6 metres again to VK6ZPG, VK6RO and VK6RO from 0513. On 14th February the band opened to New Zealand again with ZL2AQR 4x3 at 1100. 15th February: 1145 VK4ZHL. 17th February: 6 metres open 0745 to 0930 to VK2DDG, VK3AZY, VK3YDE, VK2XDH, VK2ARA, VK2AKU, VK2KAY, VK3XEX and VK3AOS. 19th February: 0003 to 0336 VK2BA, VK4ZHL, VK2XAJ, VK2YYO, VK1ZPG, VK3BBB, VK7AL and VK7NC. 25th February: 1140 VK2QF, VK2AKU, VK5LP on backscatter! 26th February: 0710 VK4DV and VK4ALM.

3rd March: 1050 VK7ZIF; 4th March: 1040 JA4MBM to VK5ZRO 5x9 both ways, and not a sign of any other signal on the band. *Strange.* 7th March: 0910 ZL2CD, ZL1ADP: 10th March: 0715 to 0831 JA1, 2, 3, 6 and 9 for nineteen contacts mostly 5x9. At 1300 VK2YL, VK1ZQS, VK4FNQ; 17th March: 0210 JA7, 8, 9 and 0. These stations were still workable by VK5LP as late as 0450 after ceasing at other VK5 locations. They were audible even longer on the 50 MHz end of the band.

VK2 HAPPENINGS

Gordon VK2ZAB continues his experiences on 2 metres and above after having had many exciting opportunities for DX on 6 metres. He has had time now to re-establish the 2 metre SSB contacts which are more or less independent of conditions around NSW. So the following is an "around the compass" summary of such signals heard in Sydney during February.

"From east of north Bill VK2ZCV was 5x4 to 5x9 in Sydney on at least eight occasions and on 25th February he was joined by another Port Macquarie station, Tom VK2SV who was 5x2. Further north, Tom VK2DDG at Byron Bay was 5x3 on 2nd February, and Bill VK4LC at Eagle Heights reached 5x2 on 17/2 and is on most weekends at 2145 on 144.250, and beaming towards Sydney.

"To the north and west of north Graham VK2MQ at Moree was up to 5x2/3 on seven occasions. Closer to Sydney activity was quiet early in the month, Barry VK2ZAY had to cope with excess water and Jock VK2ZQX also from Gunnedah is still erecting antennas at his new QTH. Barry was 5x6 on 29th February and Doug VK2XDH at Uralla 5x7 on 25th February. Don VK2ADY at Tamworth was 5x6 on 27th February and a new signal from the north emanates from Kevin VK2CKM near Armidale, being 5x5 on 25th February. Les VK2DSG at Duri came up on 27th February at 5x9, after a long absence.

"Still up north, Brian VK2AKU at Narrabri was 5x2 on 29th February and has been working another new station in Bob VK2DSM at Orange, who also had signals into Sydney on several occasions and being 5x7 on 20th February. Bob can be heard working Neville VK2DR at Bathurst fairly frequently.

"South of west, John VK2YEZ at Griffith is up to 5x3 on Mondays and Wednesday nights at 1130 and on 29th February was joined by Graham VK2DGW who has recently re-established his station in a new and better location at Griffith and came in at 5x2 recently.

"To the south west, the Wagga Radio Club station VK2WG was active during the field day on 11th February and was 5x3 in Sydney from a site south east of Wagga. However, Geoff VK2KBK in Wagga was 5x4 about the same time so height isn't everything! Jeff VK2EJJ in Wagga was also 5x4 on 14th February and Allen VK2KAW 5x7 on 17th February.

"Doug VK3UM is on 144.200 from his Chirnside Park, Melbourne QTH each Saturday and usually Sunday at 2230. Contacts vary but we have been able to pass messages with minimum repeats each weekend during February. Brian VK2QP and Ross VK2DVZ also hear Doug in Sydney. VK1 stations are very much in evidence at these times and contacts between Sydney and Canberra on 2 metres and 70 cm are commonplace. Listen for Eddie VK1VP, Ralph VK1RK, Ian VK1ZIF, Ian VK1BG, John VK1CJ and Glenn VK1KAA. The VK1s also work into Melbourne of course. Another VK1 heard less frequently is Ted VK1AOP who was 5x2 on 5th February.

"Further around to the south is John VK2ZMX in Cooma who usually puts in a good signal to Sydney, being 5x5 on 25th February. Talking of the south, where are the VK7s?"

Thank you for writing again Gordon. I am quite certain the continuing signals from so many stations over such a wide area, which have been reported by you regularly, has done much to ensure a level of activity in NSW which is the envy of other areas, and your contacts with others to Doug VK3UM in Melbourne, with the VK1s at the in-between point has spurred quite a number of generally missing stations to come on the air with the reward that there are so many to work. And with "Amateur Radio" as the medium to bring the news of these happenings to the various operators around the country, it must be seen to be a very worthwhile joint effort.

NEW ZEALAND SHARES THE DX

In January/February 1984 "Break In" from ZL1MQ it is interesting to note the range of contacts from that country and how many of them were shared by VK stations. Looking at the month of December 1983 we find:

"December saw the most widespread, intense Es openings recorded here, ranging from VK0CK, Macquarie Island to ZK2RF on Nuie Island. 1st December: Jim VK9NS rocked in at S9 to work ZL1/2 and FK8EM back again; 2nd December JA into ZL1; 3rd December FK0AQ, FK8EB, FK8EM and ZJL4OY/C got VK9NS. 3rd March being VHF Field Day everybody got a share of eight countries coming through, VK, VK9NS, FK0AQ, FK8EM, FK8EB, P29ZFS, H44PT, JA, ZK2RF, ZL4OY/C. 5th December: FK and VK4 to ZL1; 6th December VK5 plentiful plus VK1,2,3,4 and FK8; 8th/9th/12th/13th VK and FK8; 15 and 16th December: JA and FK8, ZL4OY/C worked 45 JA on 50 MHz, VK9NS appeared as VK9WCY, ZL1,2,3, all worked VK6; 17th December: FK8, VK, and VK3 and VK5 hard working ZL3TJD/A on Snares Island.

"20th/21st/22nd VK9NS, FK8 again, ZL4OY/C to ZL1 and 2. 23rd December started with FK8AX, FK8EM then VK6 followed by VK4/3/5/1. 27th December: this was 'Super Day', first VK4, then VK5/8, VK0CK to ZL2,3,4. ZL3TIC worked ZL3TJD/A on backscatter, then YJ8RG, H44PT, FK8EB, FK8EM, FK8AX, FK0AQ, then more VK stations, and the day finishing with Dick 3D2CM contacting ZL1/2. The band came back again on 31st December with VK and VK9WCY and H44PT to finish the year.

"1st January, 1984: First DX station, of course, had to be Pierre FK8EM, and in again on 3rd January. On 5th January Chris appeared as ZL7OY and got ZL1MQ, VK2BA, VK2HZ. On 6th January A34GW Tonga worked ZL1/3. A very successful Es season with twelve countries outside of New Zealand being worked."

From the New Zealand Contest Calandar it is noted there is to be a 6 metre only contest on Saturday 17th November. The ZL Field Day Contest will be on from 0400 to 1000 on Saturday 1st December, continuing on the Sunday 2nd December from 1800 to 2400. These hours may seem a bit odd to us in VK but remember New Zealand will be on daylight saving hours the same as we are, but they will still be finishing their field day at what is really 11 AM Eastern Daylight Time.

All this contest information is made available in the hope there may be some moves by some club in Australia to re-establish a VHF Field Day in December and hopefully to coincide with the New Zealand annual effort. If any such moves are being made then please don't leave it until November to tell me as it is too late then for readers to be advised. The information should rightfully be no later than the September issue which requires a deadline of 20th July for copy!

OSCAR-10

I don't generally report a lot of specific news in regard to operating through OSCAR-10 as those who are consistently using the satellite are well aware of who is on the band, with some stations now having had more than 1000 contacts in well over fifty countries, feats which require a lot of time and dedication. It has certainly proved itself to be a great communications source throughout the world, and one of the spin-offs from such operation has been the improvements made to equipment and antenna systems, thereby assisting with operations and contacts on 144 and 432 MHz at those times when the satellite is not being used.

There are however certain operating procedures necessary for users and potential users which need to be adhered to if all who desire have an opportunity to work through OSCAR-10. The most abused operating procedure is excessive uplink power, which, when applied, makes the weaker signals disappear and also weakens signals from those operators making efforts to communicate properly. Such violations only serves to discourage others from operating through the satellite.

Because this excessive power has been cropping up as a continuing problem AMSAT has laid down certain guidelines in regard to maximum uplink power, and although probably published elsewhere, as these notes serve the VHF/UHF community it is an appropriate place for the rules to be stated, and they are:

MODE B — The maximum user uplink

power should not exceed 500 watts EIRP (about 300 watts ERP). It is possible to access the satellite with as little as 10 watts into a 10 dBi gain antenna when the uplink power levels are not exceeded. 10 watts into a 10 dB antenna is about 100 watts ERP.

AMSAT requests Mondays UTC are set aside for QRP operation using no more than 100 watts EIRP. During the QRP periods the transponder can accommodate more users and the weaker signals can be heard more readily.

MODE L — The Mode L transponder is not operating as well as expected and requires a high level of uplink power, and AMSAT recommends power levels of 25 kW EIRP. (Note: Whilst all the above statements are valid at the time of writing, it is possible improvements may be made in the operation of Mode L and other changes in Mode B, it therefore behoves of all users to keep themselves informed and to operate accordingly . . . 5LP).

As a matter of interest, I am informed it is possible to identify violators who are using excessive uplink power because their signals will be stronger than those from the OSCAR-10 beacon. So beware — your name might appear on a list prepared by AMSAT one day!

In regard to the receiving requirements on Mode L, as much gain as you can obtain on 436 MHz, plus a 1 dB or less noise figure preamp into a 2.5 kHz bandwidth should yield results.

One very successful user of Mode L is mentioned by Bill W3XO in "QST The World Above 50 MHz" for March 1984, this is Bill K0RZ in Boulder, Colorado, USA, who uses two 38 element loop yagis on 1296 MHz, with a measured gain of 22 dBd and 120 watts for an ERP of about 20 kW. His 70 cm downlink equipment consists of eight 15 element NBS yagis and a GaAsFET preamp at the antenna, this section also yielding 22 dBd. The system yields sun noise in excess of 12 dB, which puts it in the moonbounce category. Bill can now hear his own signal from the satellite at about 18 dB above noise and is just able to detect the transponder noise floor.

GENERAL NEWS

It's interesting to read through the columns of some of the English radio magazines, and one per courtesy of Steve VK5AIM is "The Shortwave Magazine" which has a VHF Band column. Whilst a lot of the information is not useable here, occasionally an interesting snippet comes to light. One in November 1983 issue which indicates the level of activity on 2 metres in Europe. G6EGM had had contacts in 1983 with thirty two countries, which is very interesting when one considers there must surely be some language barriers!

Another from the January 1984 issue states G3AUS in Devon had a contact with DB0JO in Germany on 3456 MHz and the antenna consisted of an array of 4 full wave dipoles etched on a PCB with a gain of 12.7 dB! This antenna was poked out of the ventilation holes on the end wall of the house which faces east.

The final piece is something which should interest all users of coax cable and originated in a copy of AMSAT-UK from compiler Trevor G4GPQ.

"He suspected his 25 metre run of URM-67 cable at 70 cm was a bit lossy so replaced it with FHJ4-50. Now, 100 W fed in results in 82 W at the antenna. The URM-67 had been up for less than eighteen months and was undamaged. The same 100 W fed to the old cable originally provided 45 W at the antenna, but when retested, this had dropped to a miserable 15 W. That represents over 8 dB loss for just 25 m at 435 MHz! Another way of expressing the deterioration is that the cable is some 4.8 dB worse after this short period."

As a follow on from the above I draw readers' attention to a very excellent article in the Autumn 1984 issue of the new "6 UP" and sent to me courtesy of the Consulting Editor Roger Harrison VK2ZTB. Entitled "A Consideration of Coaxial Cables" it is written by Rod VK2BQJ, a man with plenty of knowledge on the subject, and should be essential reading for all VHF/UHF operators. It contains a lot of useful information and figures, and lends support to the English magazine article.

Incidentally, it is interesting to see "6 UP" is being printed again, it previously filled a gap in the information available to the VHF fraternity and would seem to be achieving that again. I note the first issue has articles on 432 MHz, coaxial collinear antennas, auroral scatter, 6 metres, systems considerations on EME, loop yagis, meteor scatter and other items. It is certainly recommended reading.

As the QSL Manager for David VK0CK I advise all cards are being processed as they are received and those who want them should have them by the time you read this. At the time of writing two cards have had to be rejected as the corresponding contact does not appear in David's logbook. These have been double checked with David and are not included. He said he had to contend with quite a dogpile at times, and it would be inevitable some operators would think they had received confirmation of their contact when in fact the reports given related to someone else. This is regretted, but an inevitable problem in dogpile situations and it behoves all operators to ensure they actually do hear their callsign being acknowledged.

Again, those who want QSL cards for VK0CK should address them to me, VK5LP, as per the head of these columns, enclosing a stamped self addressed standard envelope. Overseas stations one IRC for surface mail or more if Airmail return.

A few bits of information which could interest readers regarding Macquarie Island and VK0CK. Summer temperature around five to nine degrees C during the day and down to 0 at night. Quite a lot of cold winds and drizzling rain. The camp area is not muddy, but more like dark gritty coarse sand. Drinking water is from rain caught in tanks from the roofs of buildings. A sauna is popular but the plunge pool of cold water takes some braving! David likes hiking around the island and sometimes can be away for seven days or more. There are caves to explore and seal wallows to step into! There is quite a bit of bird life, and these together with much natural vegetation has kept David's camera clicking. Whales call in occasionally, and the penguins are companionable.

For entertainment the piano helps, and David has proved to be very good at badminton. The food is good and the ale refreshing. Airlifts at infrequent intervals provide further supplies of fresh food and vegetables plus mail. A yacht called recently and was used to send home a large quantity of mail by the island's occupants. Apparently there are no television sets down there, but David monitors the sound carriers of the New Zealand and Australian TV stations and is fairly well aware of 6 metre possibilities. Since making radical changes to the antenna system of the riometer and thus stopping the 6 metre equipment getting into it, it now means more 6 metre operation is possible and the beacon can be kept going much more, so extending the opportunities for others to work VK0CK. In fact, David said he was most surprised that on 2nd March he was monitoring several Australian TV stations, the VK7 6 metre beacon, four ZL TV stations, and yet he got no response to many calls on 52.050 — he can only assume no-one thought conditions were good enough to listen or call on 6 metres!

Finally, Macquarie Island has a small species of spider and some very small flies which don't appear to worry people much. And that is about the insect population. Except recently, whilst having a meal in the mess hut, what should fly in but a blowfly! There was a mad rush for the doors to close them to keep the fly in and it was summarily despatched with a shoe (off the foot of course!). It seems the fly must have come down with the airdrop or yacht entrapped in some parcel, and had to be disposed of to prevent breeding. They hoped it was the only one!

Congratulations to Hal VK4DO in Rockhampton, who, in March 1984, had been licenced for sixty one years as an amateur operator and had the same callsign he was originally issued with. Hal can be heard every time (almost) that the 6 metre band opens to VK4 and his distinctive voice is widely known.

Mark VK5AVQ reported on 10th March having heard a beacon signing VK2RHV on 52.375. This may be the long awaited Newcastle beacon and I await further news.

David VK8KK (formerly VK5KK) now in Alice Springs is now firmly on the air and can usually be heard during 6 metre openings to that area. We look forward to him being able to do something about 144 and 432 MHz contacts in due course. He is likely to be stationed in that northern town for two to three years at least.

I note the January 1984 issue of the Japanese "CQ Ham Radio" contains, amongst others, a couple of photos of Graham VK8GB taken at the SMIRK Convention in the United States. Hopefully one day we might hear from Graham as to some of his impressions on the VHF/UHF scene in the US.

That's about all for this month, the printing deadline is a day or two earlier this month, so any late letters will need to be held over until next time. Closing with the thought for the month: *"When it comes to giving, some people stop at nothing." 73. The Voice in the Hills.*

AR

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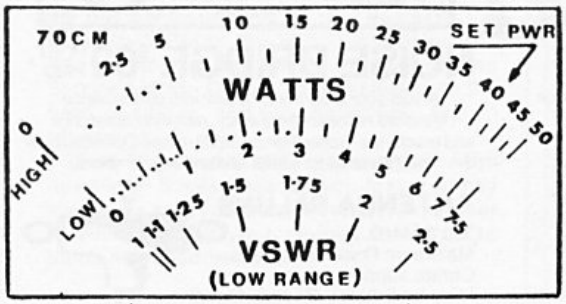

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73 de VK5ZO.

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EDUCATION NOTES

Brenda Edmonds, VK3KT
FEDERAL EDUCATION OFFICER
56 Baden Powell Drive, Frankston, Vic 3199

A field where I have not yet been able to do much is that of continuing education for the fully licensed amateur.

I have written at times of ideas and ways in which the newcomer can be helped into full participation in our hobby, and I know that some clubs run short courses or organise speakers on specialised topics. I would be pleased to receive comments or ideas on how we can do more to provide continuing education.

The nature of amateur radio operation has changed radically from the early days, and few of us are likely to be able to carry out the types of experiments which contributed so much to the development of radio and communications to their present state of development.

But we owe many of our current privileges to the fact that the amateur service is seen as the place for further experimentation, and there is still more that can be done.

The acquisition of a licence does not mean that the books and tools can then be put aside forever, or that a "black-box" will be all that is needed for a lifetime hobby. We must encourage the newcomer to continue his/her interest in the theoretical side as well as the on-air operation of the new "black-boxes".

It is not necessary to have a lot of sophisticated equipment. Most newcomers are prepared to experiment with antenna building and erection, but many are hesitant about exploring the inside of the transceiver. I would hope that every newly licensed operator would feel confident of being able to do his/her own troubleshooting at least to the "block diagram" stage. To do this, it is probably necessary to try to match up the circuit diagram to the inside of the set — a bit daunting at first no doubt, but an excellent learning procedure — but remember all the safety procedures when you take the case off. For most of us, most of the learning and understanding comes after the licence is gained.

I have a couple of apologies. It has been brought to my notice that there was an error in the answers given to the AOCP sample exam back in February — the question about the resistor in series with the meter — number 15 I think. I wonder how many readers worked out what the answer should have been. Secondly, to the VK2 Educations Service. My remarks about their Novice Study Kit were not intended as criticism but seem to have been interpreted thus.

My comment about the CW learning tape was intended only to mean that from our experience we prefer students to learn the letters alphabetically rather than the E-1-S-H-5 pattern as used there. I apologise for any misinterpretations that have arisen. I have no criticism of the learning kit as a whole, and was very pleased to see its production.

By the time you read this, a new sample Novice Theory exam should be ready. We will try to continue to produce two exams per year at each level, as the papers do seem to be useful.

Best of luck to all those sitting for the exam this month.

73 Brenda, VK3KT

AR

ALARA

Australian Ladies Amateur Radio Association

Margaret Loft, VK3DML
28 Lawrence Street, Castlemaine, Vic 3450

ALARA this month extends our heartiest congratulations to AUSTINE VK3YL on her 54th Anniversary as an Amateur Radio Operator, Austine was first licensed in May 1930.

The following is an extract of an article which was printed in the 3rd April issue of "Wireless Weekly" 1931. *"Fans ask for photos of VK3YL instead of QSL cards. Until recently the field of amateur radio has been exclusively a 'man's game', but Australia now has several ladies who are actively engaged in piling up records and QSL cards. The photograph shows Miss Austine Marshall VK3YL who claims the distinction of being the youngest 'ham' among the fairer sex. VK3YL has been on air since May 1930, and her first transmissions were on 42 metres with a portable transmitter loaned by VK3JR. Power was derived from 150 volts of 'B' batteries and with this outfit stations in Vic, SA and NSW were worked.*

"Miss Marshall said 'When the first station I ever called came back to me I was almost too excited to key'. Old timers who can recall their first contact will remember that they all felt the same way.

"The present transmitter is a tuned plate tuned grid using either a UX210 or 2x UX210s in parallel. The input is only about 20 watts but stations in all Australian states, Java, New Zealand and Fiji have been worked.

"Quite a lot of our respectable local hams seem to be budding Romeos and invariably ask for a photo. As they send a photo in return Miss Marshall has quite a rogues gallery showing the outfits and operators of about fifty amateur stations.

"Her station at 650 Dandenong Road, Murrumbeena is the rendezvous of several of the local boys at least one night a week, and any visiting amateur from interstate or overseas is always assured of a hearty welcome from Miss Marshall and her two charming sisters."

This is a recent photo of Austine, who has been a member of ALARA since April 1976, as my copy of "Wireless Weekly" is not distinct enough for reprinting.

MILDURA GET-TOGETHER

Marilyn VK3DMS reported at the March committee meeting that thirty six members and OMs have indicated they will be attending our first ever national get-together at Mildura in September. Others are also hoping to attend so we are hoping the numbers may reach fifty.

Plans so far are to have a barbecue lunch at the Mildura zone club rooms, dinner at Marilyn's QTH and on Sunday a tour of the area followed by lunch on a Paddlesteamer. If you would like to attend or require more information please write to Valda VK3DVT, PO Box 4, Middle Brighton, Vic 3186.

CONGRATULATIONS

Congratulations to the following new callsigns: Helene VK6HI formerly VK6NSH and Christine VK6ZLZ formerly a SWL. Also to Valerie VK4VR formerly VK4ZVR and 4KCJ. Val's father-in-law now a silent key was formerly VK4VR. In Val's letter to me she asked me to pass on to all others who passed the last exam her congratulations and to those who did not pass, please don't give up as the final achievement is most rewarding. Val has been studying for four years. At the February AGM of the WIA Qld Division she was elected to Council as Jnr V-Pres and Service Liaison Officer, so good luck with the new positions and do hope you find it rewarding.

Girls if you did NOT receive the April newsletter it was because you forgot to pay your subs so if you want to remain a member of ALARA send your cheque for $5.00 to Valda now; address above.

NEW MEMBERS

Rae G4JMT 8th March, 1984 and we are very pleased to welcome the Orange Amateur Radio Club as a subscriber to ALARA from 6th March.

Until next month 33/73 es 88 to you all.

Margaret

AR

AR SHOWCASE

NEW MICROPHONES FROM KENWOOD

Two new microphones are now available both from Kenwood.

The first is the Communication Microphone MC-85. It is designed for use with a wide range of equipment and has the following features:

- an output select circuit and can be connected to three transceivers at a time;
- an UP/DOWN as well as LOCK/PTT switch;
- is of the high quality unidirectional electret condenser type.

With its built-in speech processor as well as limiter circuit, certainly an ideal DX and local operation microphone.

The second one is the MC55 Mobile Microphone.

This mic, on a 30 cm slimline gooseneck can be fitted under the sunvisor retaining screw of a car and is easy to adjust for use by the driver or passenger. The controlbox is separate from the mic and by mounting the control onto the gearstick, mode changeover, UP/DOWN tuning and lever adjustment can be remote controlled. LED indicators show Tx or Rx mode and the Tx-time-out circuit improves operation and driving safety.

AR

APRIL'S BEST PHOTOGRAPHS

This month all the judges are unanimous in their decision. The lucky person that will now be considered for the Afga camera in June is Erik Bierre VK2BEK with his photographs of the Amateur Cat.

WINTER OLYMPICS

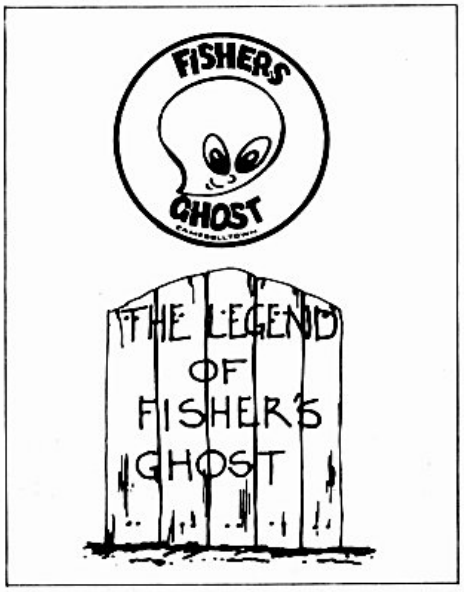
Yaesu Musen Co Ltd and Yaesu Electronics Corporation were selected as the "Special Supplier of Amateur Radio Equipment for the Sarajevo 1984 Winter Olympic Games".

Yaesu, a world leader in communications equipment and accessories for amateur, commercial and consumer use, was pleased to participate in the 1984 Winter Olympics effort as a part of its ongoing commitment to improved communication throughout the world. In keeping with the Olympic spirit, Yaesu's participation at Sarajevo helped to bring the people of the world closer together.

from World Radio, February 1984

AR

AWARDS



FISHER'S GHOST ARC

On 17th June, 1826, a man by the name of Frederick George Fisher left his home in Campbelltown NSW and was not seen again.

A neighbour, George Worrall, spread the story that Fisher had made a sudden exit from the district and fled to England to escape a forgery charge.

Later, however, Worrall's actions in trying to sell a horse and timber belonging to Fisher and his attempt to gain possession of the title deeds of Fisher's farm from the mortgagor, Daniel Cooper, aroused the suspicions of a Thomas Hammond.

Investigations by police revealed bloodstains on a fence and further down the creek. Fisher's body was recovered. George Worrell was later executed for Fisher's murder.

How then did the ghost come about?

Common legend says a John Farley staggered, ashen-faced into the Plough Inn and claimed he had seen the ghost of Fisher, who at this time, was missing.

The ghost, according to Farley, had been sitting on the rail of a bridge. It had pointed to a paddock down the creek, then faded away. Police later discovered Fisher's body in the paddock.

Passage of time has given us this ghost, which is possibly the most famous in Australia, and people world-wide associate it with Campbelltown.

An amateur radio club has been formed in Campbelltown and issues an award called the "Fisher's Ghost Award".

The Club was formed in January 1983, with an inaugural meeting at Bradbury Primary School, Campbelltown; to cater for the needs of amateur operators in the Camden/Campbelltown area.

Meetings are now held at Bradbury Primary School, Jacaranda Avenue, Bradbury, on the fourth Wednesday of each month, commencing at 7.30 pm.

The Club runs two weekly nets, as follows:
80 Metre Net on 3.580 MHz each Friday, commencing at 1000 UTC; 10 Metre Net on 28.520 MHz each Sunday, commencing at 1000 UTC.

The Club Station Callsign is VK2FFG. (Freddie Fisher's Ghost.)

The Fisher's Ghost Award is available to any amateur operator, or short wave listener who contacts the Club Station and five Club members. The Club Station counts two points, and each member counts one point.

Log extracts signed by two licenced amateurs, together with $2.00 are required, sent to "Awards Manager, PO Box 249, Camden 2570, NSW".

The Award depicts an old view of Campbelltown's Main Street, in blue, on a white background, with black lettering.

Contributed by
Arthur Harris
Hon Sec VK2KFV
AR

QSP

"DOC's POWER TO 'CLOSE DOWN' THE AMATEUR"

The Department of Communications is the government appointed control body for the supervision of the electromagnetic spectrum. In this role they are permitted to close down any communications or broadcast service, this includes, the Amateur Service.

Members of the Amateur Radio Service are most likely to be requested or directed to, restrict hours of operation or, close down their station in relation to a complaint of interference. However, in these enlightened days of modern communications technology, officers of the Department are well aware of who is to blame for various interference problems — they do not go out of their way to persecute members of the Amateur Service.

Amateurs should realise that the Department's Radio Inspectors, quite often, work under extreme psychological pressure when dealing with the very complex and diverse nature of interference. The situation is compounded by the many and varied problems encountered when dealing with human behaviour, coupled with the social, political, and economic issues of our diverse society.

Officers of the Department of Communications, may, when investigating a case of interference, find it advantageous to the smooth progress of the investigation, to request an amateur station to cease operations for a specified period of time, even although the amateur station equipment is not at fault. Under these conditions, members of the Amateur Service should, in the interest of good public relations, co-operate with the Department's officers in this respect.

However, members of the Amateur Service are entitled to be given reasons for any restrictions imposed by officers of the Department of Communications.

Members of the Amateur Radio Service are advised to contact the National EMC Advisory Service, if they consider any action by the Department of Communications, in respect of EMC, is harsh or unjustified.

AR

POUNDING BRASS

Marshall Emm, VK5FN
GPO Box 389, Adelaide, SA 5001

As you will no doubt recall, last month I talked about some correspondence on the subject of the Interrupted Continuous Wave (ICW) transmission mode. Just coincidentally I can begin this month's column with a further remark or two.

In a recent ARA Harry Reischel VK3DDJ has written an article for beginning CW operators. The article is titled "How to Break Into CW", and contains a lot of useful information for the intending brass pounder. However, Harry got off on the wrong foot in his first sentence: *". . . the mode of ICW, Interrupted Carrier Wave usually called CW for short . . ."*(!) I expect Harry has received a few letters by now, assuming his readership is as astute as mine!

Alan Shawsmith VK4SS has written an article protesting the change in the "Gentleman's Agreement" to allow "narrow band modes" in those sections of the HF bands previously reserved for CW only, and suggesting the formation of a national CW operators' club.

His discussion of the Gentleman's Agreement is interesting. Alan, along with several other CW operators with whom I have spoken recently, feels that allowing RTTY stations into the "CW only" part of the band is a serious degradation of operating conditions for brass pounders.

I'm afraid I am not convinced that the threat to CW from inclusion of "Narrow Band" modes is all that great. After all, we CW operators are thus far the only operators to have exclusive use of a portion of each band. We can operate CW anywhere on the band, but phone ops are excluded from our exclusive segments, so I think we have a distinct advantage, even if RTTY is included. In fact, it seems particularly ironic to me that we brass pounders pride ourselves on our ability to successfully communicate under conditions which would be impossible for any other mode. In other words, we are the most able to survive interference from other users, yet we demand exclusivity in "our" parts of the bands!

Part of the problem seems to be that some CW operators are unhappy unless they can find a spot where they can't hear any other signals. If their receiver bandwidth is 500 Hz or so, fair enough. Otherwise, they have an equipment problem and not a problem with over-crowding. What I am getting at here is that a RTTY signal is technically no different from two CW signals very close together (closer than two CW stations would normally work), and therefore does not tie up anything like the amount of spectrum that an SSB signal would.

Alan goes on to say that *". . . it takes two willing partners to form a gentleman's agreement and such an agreement has little effect if it is not respected by the majority. Consequently this particular policy may never attain the worth of the paper on which it is written."*

There appears to be an error of logic in the above statement. The current Gentleman's Agreement says that some parts of the band are reserved for CW only. The proposed version says those same parts of the band are reserved for NB modes (CW and RTTY) only. If CW operators do not agree to this, what is the effect? Are they saying the Gentleman's Agreement is invalid? If so they can expect SSB operators to move in. Are they going to refuse to allow RTTY stations to operate there? How, and still abide by regulations?

The only agreement as such was that phone operators would stay out of the CW segments (and not vice versa). In other words, the agreement was a restriction of operating space applied to phone operators only, by no means a quid pro quo or two-party agreement.

The logic of CW exclusive segments has been long accepted and need not be gone into in detail here. Suffice it to say that the Gentleman's Agreement has stood the test of time, and I doubt very much that recognition of the same principles in allowing NB modes in those segments will have much of a deleterious effect on anyone. Readers' comments, supportive or otherwise, are welcome as usual.

I think the future of CW is pretty well assured, although pressure for no-code exams could have some bearing on this. The main saving grace in this regard is the FCC's recognition of the fact that CW proficiency is an international requirement for HF licensing. It's perhaps paradoxical that it is in the USA, where there appears to be the most noise in favour of no-code licensing, that Novices are still restricted to CW only — surely the greatest imaginable guarantee of an unending supply of brass pounders!

The idea of a national CW organisation is a good one, and I will be happy to lend it all possible support. Generally speaking the WIA has done a pretty good job of looking after the interests of CW operators, but times change, and we may soon have a real need to look after ourselves.

Next month we'll take a look at some ancient history — ancient enough that the wars were between CW operators and the "sparkies" they were edging out of the airways.

Till then, 73 ES GL.

AR

INTRUDER WATCH

Bill Martin, VK2EBM
FEDERAL INTRUDER WATCH
CO-ORDINATOR
33 Somerville Road, Hornsby Heights, NSW 2077

Fred, VK1MM, is leaving his position of co-ordinator for VK1, as he is very busy with other duties within the WIA, and, as well as being a Federal Councillor, Fred is now the Federal RTTY Co-ordinator, which no doubt will keep him busy. Fred has done his share insofar as the Intruder Watch is concerned, and we will be sorry to lose him. A regular contributor of intruder loggings, Fred's expertise stood us in good stead in the past. Thank you, Fred, for a good job well done.

Bruce, formerly VK6NVV, the VK6 IW Co-ordinator, is to be congratulated on his change of callsign to VK6KVV — well done, Bruce.

Grahame, VK1GP, has taken the bit between his teeth, and is joining the IW ranks as VK1 Co-ordinator, and we welcome you, Grahame, and hope you can keep the reports rolling in from the ACT Division. You won't have a great deal to do, as the VK1 Division is a great supporter of the IW.

All the regular intruders are continuing to annoy and interfere; F9T on 21.115 MHz; UMS on 21.032 MHz; SGJ on 7.060 MHz, and, of course, all the inconsiderate broadcasters on the 40 metre band. Keep sending in the reports on these, as the occasional report does not have much impact.

The Intruder Watch Net is on 3.540 MHz on Thursday evenings at 1030 UTC. All are welcome, and anyone with any enquiries re Intruders, etc, are invited to call-in. Just one proviso there — as the Net Control, VK2EBM, has occasionally to go and earn his daily bread at night, you may find the occasional night when the Net is not apparent — don't give up, but look the following week, and you'll be sure to make it.

Before closing this month, I have an item to mention, which is important to all users of the 40 metre CW segment.

The United States FCC, (their equivalent of our DOC), has passed a message down to the Australian Intruder Watch regarding some intrusions being heard on the bottom end of 40 metres. This information came from Gib, W7JIE, the Region 2 Co-ordinator, through Bob, ZL1BAD, the Region 3 Co-ordinator, and it appears the FCC wishes to know if the signals in question are in fact being heard in VK, and they are looking for bearings. Anyone out there with a 40 metre beam could help out a lot if he could try and get a bearing on these signals. The signals appear mostly as loud carriers, with about four of them sitting just above 7 MHz, to about 7.004 MHz. They may, or may not be related to a similar set being heard *below* 7 MHz, down to about 6.996 MHz. CW appears on occasion, and also speech, but this has been too weak to resolve, as well as being in a foreign language. Anyone who can hear the speech, and identify the language, is invited to drop me a line with the particulars. There is some thought that the signals are part of a telephone system, with 'phone bells being heard, and cross-bar switching. No clues thus far on the location, however. This is a good opportunity to help the Amateur Service, and the FCC, who are a good body to have on side.

See you next month

AR

CONTESTS

Reg Dwyer, VK1BR
FEDERAL CONTEST MANAGER
Box 236, Jamison, ACT 2614

CONTEST CALENDAR

May	
5-6	*Florida QSO Party (CQ)*
12-13	*USSR Peace to the World Contest*
19-21	*Michigan QSO Party (CQ)*
26-27	*CQ WW WPX CW Test*
June	
9-10	*ARRL Test +*
9-10	*South American CW Test +*
16-17	*All Asian Phone Test +*
23-24	*ARRL Field Day +*
July	
7-8	*Venezualan Phone*
14-15	*International QRP Test +*
28-29	*Venezualan CW*
28-30	*County Hunters CW Contest*
August	
4-5	*European CW Test +*
11-12	*Remembrance Day Contest*
18-19	*All Asian CW +*
September	
15-16	*VK Novice Test*

Note: The + signifies an unconfirmed contest.

ADDENDUM TO THE RESULTS OF THE 1983 RD TEST

VK5ANW 379 points Phone Section.

From the comments on the logs over the past three years and the general reaction of the majority of the contestants the following alterations to the Remembrance Day Contest rules will be made.

1 *CW/RTTY contacts will score double the phone points score.*
2 *Contacts on bands above 30 MHz will have the time between successive contacts increased to six hours to reduce the vast differences between the country and the city amateurs.*
3 *Detailed summary sheets will be insisted on. To accurately distinguish between the scores of phone and CW especially in the open logs.*

This is of course being printed in the May edition and the copy for the June edition has been submitted for collation in April therefore the changes mentioned here are for your prior notice to the final printing of the rules in the next edition of AR.

AMENDMENT TO THE VK NOVICE CONTEST RESULTS

After notification from VK3XQ of his CW log being missed in the count and the subsequent search for the log the following changes to the results for VK3 VK Novice Contest results are made.

My apologies to the rest of the VK3s for this omission.

VK3 Section B	Score	Contest Champion Score
VK3PDK	*168*	*10*
VK3XB	*151*	*9*
VK3XQ	*74*	*8*
VK3BKU	*30*	*7*
VK3WP	*24*	*6*
VK3KS	*22*	*7*

CONTEST CHAMPION TROPHY 1983/4

VKs	JM	RD	VK/ZL	NOVICE	TOTAL
3XQ	10	9		15	34
6NSD	10	-		9	19
3CGH	9	8		8	25
5QX	8	-		16	24
3KI	7	-		N/E	7
4NDW	6	-		N/E	6
3DAW	5	-		N/E	5
3VF	4	-		N/E	4
2JM	10	-		N/E	10
3BKU	9	4		8	21
3BAF	10	-		N/E	10
2EL	10	9		N/E	19
3SP	9	-		N/E	9
5YO	8	-		N/E	8
2TR	10	-		N/E	10
4AOF	9	-		N/E	9
5DL	8	-		N/E	8
3LC	10	-		N/E	10
3XB	9	6		9	24
2BQS	8	8		10	26
1DL	7	-		N/E	7
7AL	6	-		N/E	6
3DAK	5	-		9	5
7NIM	4	-		N/E	4
3KCC	3	-		N/E	3

N/E = Not Entered.

These are a sample of the scores that are achieved by the entrants in the contests nominated for the contest champion trophy. It is not feasible to print the scores of all the entrants but those of you who are interested in their position can easily ascertain their score from the printed results.

COMMONWEALTH CONTEST

Conditions during this contest in March were quite good, and VK scores should generally be well up on last year with many surprising themselves with UK contacts on 80 metres. The high QSO numbers being handed out by VK2 stations seem to indicate that the reign of VK3 in the team contest is definitely in danger.

There is still time to get your entry in to G6LX before the closing date of 14th May. See if we can beat the VK entry of 53 in the 1983 contest.

REGULATIONS FOR THE INTERNATIONAL SW RADIOCOMMUNICATION CONTEST "PEACE TO THE WORLD"

1 *Object: to strengthen friendly relations among radio amateurs of the world, increase their sportsmanship and provide possibilities to fulfill, within a short period, the requirements for the diplomas offered by the Radio Sport Federation of the USSR and the Krenkel Central Radio Club of the USSR.*

2 *Promoter:* The Radio Sport Federation of the USSR.

3 *Contestants:* The contest is open to radio amateurs (those in possession of transceivers) and listeners from all over the world.

4 *Groups of contestants:* a Single operator, single band. b Single operator, all bands. c Multi-operator, all bands, single transmitter. d Listeners.

Note: Club radiostations pertain to group C, irrespective of the number of operators in the crew of a radiostation.

5 *Contest Rules:* The contest "Peace to the World" shall be held from 21.00 UTC 12th May, 1984 to 21.00 UTC 13th May, 1984.

Bands and modes: QSOs may be carried out by CW and Phone with a single sideband modulation on bands 3.5-7-14-21 and 28 MHz, as well as through radio amateur satellites "RS" and "OSCAR" with re-transmission from band 144 MHz to that of 28 MHz. QSOs through satellites with multipliers are judged as those made on a separate additional band. No cross mode (phone-CW) is allowed. Contest call — CQ-M (Peace to all). Contest call may be transmitted by contestants only within the following amateur band allocations: by CW: 3.505-3.600, 7.005-7.040, 14.010-14.100, 21.010-21.150 and 28.010-28.200 MHz; by phone: 3.600-3.650, 7.040-7.100, 14.150-14.350, 21.200-21.450 and 28.400-29.100 MHz.

Check numbers: During QSOs contestants exchange their check numbers. Soviet stations transmit check numbers composed of RST/RS plus region (oblast) numbers. Ex: 579021 or 57021. Others than USSR stations transmit RST/RS plus QSO numbers. Ex: 579001 or 57001.

Scoring: a Each QSO made within a continent scores one point, QSO between continents scores three points. b Listeners are judged as follows: 1-way QSO receiving scores one point; 2-way QSO receiving scores three points.

Note: During 1-way QSO receiving both callsigns plus the check number of one of the radiostations are to be received. During 2-way receiving both callsigns plus both check numbers are to be received.

c Repeated receiving contacts with the same radiostation are judged only as those made on different bands irrespective of the mode of operation. d For foreign contestants a QSO made within their country is judged only to obtain a multiplier with no scores to be awarded. e Soviet contestants obtain neither points nor multipliers for QSOs within the USSR.

Multipliers: a The number of countries and territories whose radiostations were worked during the contest is determined according to the "R-150-S-" diploma list. b For one country/territory worked is given one point for a multiplier on each band. c Total multiplier is the sum of countries/territories worked on all bands.

Total score: Is the sum of points gained by a contestant on all bands multiplied by a total multiplier.

Note: When summing up results, only countries and territories confirmed by contestants' log sheets shall be taken into account as multipliers.

Winners and awards: a Winners among foreign contestants and those among soviet contestants are determined separately. b Foreign contestants in each group A, B, C and D; in group A on each band shall be awarded as follows: 1st place in one's home country: diplomas; 1st-3rd places in one's home

contintent: diplomas and medals of the 1st, 2nd and 3rd grade respectively. Individual and club radiostations gained first overall places in a total classification among all foreign contestants shall be awarded with the prizes donated by the magazine "Radio", diplomas and first grade medals, those placed second and third with diplomas and medals of the second and third grades respectively, those placed fourth-sixth — with diplomas.

All foreign contestants worked during the contest at least ten USSR stations shall be awarded woth commemorative badges.

Procedure for obtaining diplomas: Soviet and foreign contestants having fulfilled during the contest "Peace to the World" the requirements for diplomas "R-150-S", "R-100-O", "W-100-U", "R-15-R", "R-10-R" and "R-6-K" shall be entitled to obtain them without submitting applications and QSL-cards, if the log sheet of a contestant carries the information concerned.

Judging: Judging shall be carried out by the Panel of Judges appointed by the Radio Sport Federation of the USSR.

Reporting procedure: Irrespective of the number of points obtained, log sheets are kindly asked to be sent by 1st July, 1984 to the following address: CQ-M Contest Committee, PO Box 88, Moscow, USSR.

NATIONAL EMC ADVISORY SERVICE

Tony Tregale VK3QQ
FEDERAL EMC CO-ORDINATOR
38 Wattle Drive, Watsonia, Vic. 3087

INTERFERENCE — "Don't live in the past"

"In the old days amateurs were closed down or placed on restricted operations at the drop of a hat by the draconian authorities . . . This is no longer so! The Australian Department of Communications is most co-operative and helpful where interference problems affect members of the Amateur Radio Service."

Before the advent of television, professional and amateur radio communications services were, in the main, only concerned with the actual RF power output and the information quality. No-one worried too much about harmonics or spurious thingamygigs. Then along came the "one-eyed monster," followed by such catch phrases as, "TVI proofing the Viking, TVI treatment for command transmitters, PI-network for TVI reduction, Don't pamper your harmonics," and so on.

During the years which followed the introduction of television, amateur radio operators were pressured and threatened by the authorities who, in most cases, were ignorant of the causes and cures of TVI . . . "TV was King!" — Nothing, yet nothing must disturb the almighty one-eyed monster. The easy answer for the authorities was to close down the amateur station. Any non-technical person could see, if you shut down the radio transmitter and the interference disappears, the fault must be in the transmitting equipment! Not so, of course, but it was easy to sell this to the "monster crazed" general public and the, "anything for a story," mass media.

Amateur and Professional communications services carefully inspected their equipment for any undesired emissions. Communications rapidly improved: However, the TVI still persisted! And, the authorities continued to take the easy-out. Indeed, the most popular way out was by using the amateur as a public scapegoat, with the mass media painting a picture of the amateur as an undesirable alien . . . Whilst the domestic equipment manufacturers and importers, supported by "monster hysteria," laughed all the way to the bank. Little wonder there are so many members of our service who are still extremely nervous in regard to all aspects of interference.

Many years went by, with the authorities only very slowly seeing the "light". Of course, they were somewhat blinded by the political, economic and social implications of even daring to suggest the almighty TV set could be at fault . . . Susceptibility and Immunity — What are these dirty words?

Fortunately, we have at last arrived at a stage where the authorities are able to look at the situation, both technically and politically, with an almost unbiased attitude. In the main, amateurs no longer have to fear the authorities in regard to interference problems.

With modern design amateur radio equipment the incidence of interference which is directly attributable to faulty amateur transmitting equipment is less than one per cent. Most interference suffered by home entertainment equipment and consumer products is due to the poor immunity factor of these products. The manufacturers and importers of these domestic products are, at this time, under *no legal obligation whatsoever* to take any action in respect of the EMC of their products.

Although, in the majority of cases, it is the domestic equipment which is the reason for the interference problem; until manufacturers and importers of domestic products are obliged to deal with the EMC, and the EMC shortfall of their products, the amateur can still be a victim of domestic and political abuse, even though he or she is technically in the right. We trust the new Radiocommunications Act will go a long way towards removing this technically and socially unjust burden from members of the Amateur Radio Service.

Ironically, the USA, Canada and Europe have suddenly woken up to the fact, if they do not make a positive effort to clear up the overall EMC problems, they will never see the 21st Century — Instant panic! . . . The Amateur Radio Service has been telling governments and authorities for years to take an interest in this aspect of electronics. Again, the old story, "The almighty dollar and political manoeuvering takes precedence over technical correctness."

Perhaps we will soon have a world-wide agreement on EMC standards and practices for all equipment and products. In the mean time, members of the Australian Amateur Radio Service are reminded of the importance in observing the following guidelines in all cases of interference.

- *Ensure that you keep a DETAILED written record of ALL events, no matter how small they may seem at the time: DON'T rely on memory!*
- *Ensure that your station log is always accurate and up-to-date.*
- *Ensure that your station is operating within your licence regulations.*
- *Ensure that you have accurate, working and DOC approved RF power measuring instruments for the mode of emission in use, if your station equipment has the capacity to produce RF power at, near, or above your licence top RF power limit or restriction.*
- *Ensure that you have an effective Low Pass Filter (LPF) between the transmitter and the antenna system.*
- *Ensure that the VSWR on all feedlines is not excessively high (say, below 2:1).*
- *Ensure that your ground system is as effective as possible.*
- *Ensure that your radio shack is clean and tidy. Also, antennas and feeders are tidy and in good condition.*
- *Ensure that your own domestic equipment is free of interference at all times.*
- *Co-operate with the Department of Communications Inspectors.*
- *Inform the National EMC Advisory Service if you have any problems or difficulties, at any time.*

AR

NOTICE

All copy for inclusion in July 1984 Amateur Radio must arrive at Box 300, Caulfield South, Vic 3162 no later than midday 25th May 1984.

AMSAT AUSTRALIA

Colin Hurst VK5HI
8 Arndell Road, Salisbury Park, SA 5109

NATIONAL CO-ORDINATOR
Graham Ratcliff VK5AGR

INFORMATION NETS
AMSAT AUSTRALIA
Control: VK5AGR
Amateur Checkin: 0945 UTC Sunday
Bulletin Commences: 1000 UTC
Winter: 3.680 MHz
Summer: 7.064 MHz

AMSAT PACIFIC
Control: JA1ANG
1100 UTC Sunday
14.035 MHz

AMSAT SW PACIFIC
Control: W6CG
2200 UTC Saturday
28.880 MHz

Participating stations and listeners are able to obtain basic orbital data including Keplerian elements from the AMSAT Australia net. This information is also included in some WIA Divisional Broadcasts.

ACKNOWLEDGEMENTS

This month we are heavily indebted to the Telemail Service for the majority of the technical data included. Special thanks to AMSAT and the University of Surrey UOSAT team. Finally a special thank you to Bob VK3ZBB for his regular contribution.

THIS MONTH'S COLUMN

This month the Amsat Australia column is totally committed to the OSCAR-11 package previously known as UoSAT-B.

UoSAT-OSCAR-11 IN ORBIT

The UoSAT-B spacecraft riding as a piggyback with the Landsat-D Prime satellite was successfully orbited today, 1st March 1984, from Spacecraft Launch Complex 2W (SLC-2W) at Vandenberg AFB. Launch was aboard a Delta 3920 vehicle, the 174th member of the highly successful Delta series. This marked Delta's 163 success — an enviable 93.7 percent track record. NASA is now phasing out the expendable Delta series and replacing it with the reusable Shuttle. Liftoff went like clockwork, within one second of the nominal 19:59 UT.

Following the deployment of Landsat, the UoSAT spacecraft separated from the second stage of the launcher at about 21:11 UT. The telecommand station at the University of Surrey sent commands to initialise the spacecraft software and activate the 145.825 MHz beacon for a few seconds. The few seconds of telemetery showed that the spacecraft was in good health, so an additional command was sent to acquire about five minutes of data. The spacecraft is in a nominal orbit with inclination 98 degrees, period 98.6 minutes and altitude 690 km. The international designator for UoSAT-OSCAR-11 is 1984 021B. I talked with Dr Martin Sweeting, G3YJO, the Surrey project manager, as the first signals were being received at Surrey and heard them over the phone. Martin was elated at the success and I conveyed our congratulations on his success for all of AMSAT. AMSAT is proud to have played a small role in making this newest amateur satellite come to life.

Tom Clark W3IWI — AMSAT President

OSCAR-11 STATUS — Initial Orbits

OSCAR-11 has been successfully commanded on during the first three passes over Surrey this evening. All the first indications are that the spacecraft is in very good shape and that the initial checkout will proceed faster than expected. On the first pass over Guildford (during which, coincidentally, OSCAR-11 was ejected from the launcher) all the primary systems were powered up (receivers, battery charge by separation switches, telemetry, computer, navigation Magnetometer by telecommand). The computer was then bootstrapped and generated about ten seconds of telemetry. During the rest of the pass, another two bursts of telemetry of about four minutes duration were generated by command through the computer loader. On the second orbit, a short and long burst of telemetry were again generated.

During the second burst, a beacon multiplex command was issued on the 144 MHz uplink and this was correctly received — full duplex 144/145 MHz operation! The second half was occupied loading a short 1802 programme which transmitted for eighty minutes, the beacon multiplexers again being set to telemetry. The third and last pass at Surrey for this evening was spent loading a similar programme to the last one which will transmit for ten hours, ie until just before AOS at Surrey tomorrow morning. All temperatures on OSCAR-11 are still settling. Activities tomorrow include the testing of various other 1802 computer I/O ports before running other programmes to record whole-orbit telemetry and other housekeeping functions as battery charge and temperatures dictate.

OSCAR-11 STATUS 4TH MARCH 1984 0800 UTC

Following a flawless launch on DELTA 174 from Vandenberg Air Force Base, Ca, UoSAT-2 separated from the launcher at approx 19:11 UTC over Turkey and in range of the Command Station at Surrey. A lengthy series of instructions was transmitted to the spacecraft to establish the initial operating conditions and then the S/C computer was instructed to switch the 145.825 MHz downlink on for 10 secs to check housekeeping data and ensure that outgassing of the beacon did not give rise to corona. The spacecraft responded perfectly first time and good data was received and decoded at Surrey. The 145 MHz beacon was then activated for several minutes, under computer control, and further data gathered which confirmed that the spacecraft was in very good shape. Just prior to LOS at Surrey, the computer was instructed to activate the beacon once more for a further four minutes and good data was received as the spacecraft disappeared over the horizon. On orbit #2 the 145 MHz beacon was re-activated by abbreviated computer instructions and the short and long bursts of telemetry repeated — data indicated everything on the spacecraft to be entirely nominal and so the computer was instructed to keep the 145 MHz beacon active in check-summed telemetry at 1200 BPS for the next eighty minutes. The spacecraft arrived at UoS silent (as expected) at AOS on orbit #3 and the short and long bursts of telemetry data process was repeated — data again indicated the spacecraft to be entirely nominal and so the computer was instructed to activate the 145 MHz beacon for the next ten hrs whilst the spacecraft was out of range of the Surrey station. With all having proceded perfectly to plan thus far, the UoS team relaxed (collapsed?) and waited for telemetry reports from around the world! The first indications that all was not well came from the printer when Larry Kayser wanted to know why he could not hear UO-11 followed by telemail from Phil Karn etc. The UoS Command Team were "revived" and awaited the first pass of the day, orbit #8. The spacecraft was silent (again as expected) at AOS, however repeated attempts to re-activate the 145 MHz beacon using the S/C computer failed as did direct command. Heated analysis of the situation resulted in the preliminary theory that the "Watch-Dog" timer (a device that de-activates the 145 and 435 MHz beacons after twenty one days if no commands have been detected from the ground — remember UO-9!) may have been incorrectly initialised and thus may have terminated transmissions prematurely. The "Watch-Dog" can be reset by command and this, and re-activation of the 145 MHz beacon, were attempted on orbit #9 — however with no success. Continued attempts on orbit #10 yielded nothing and things began to look rather grim. At that time no reason could be found for the premature shut-down of the beacon and the prevailing theories tended towards cataclysm. Additionally, telemail "went down" and we had to resort to phoning around to gather more pieces of the picture! Data from G Ratcliffe via phone from Australia confirmed that the spacecraft systems were functioning nominally when he tracked UO-11 just before termination of transmissions. The spacecraft was in very good shape! Detailed examination of the S/C computer software used during the first few passes showed that the timing had been in error — the timing clock selected had been running at eight times that required — resulting in premature shut-down of the beacon on both orbit #2 and #3 entirely in agreement with observations!

This now veered the theories away from the "Big Bang" and towards some sort of spacecraft systems problem. Lack of feedback from the spacecraft keeps us effectively blind and all we can do is postulate the most likely theories based on pre-launch experience. The current theory is that there may be a problem with the 145 MHz beacon causing it

to fail to operate correctly and generate wide-band noise and block the command receivers. This theory is based on observations of the performance of the beacon during test where some problems of this nature were encountered but were later believed to have been fixed. The Surrey Command Station are continuing to attempt to command the 145 MHz beacon OFF and the 435 MHz beacon ON — so far without success. If the 145 MHz beacon is ON but not operating correctly, it should be possible to observe it with high gain antennas and spectrum analysers etc. Should this prove to be the case, then it may be most profitable to attempt to command the spacecraft using the 1.2 GHz command uplink as this uplink is the most independant of the VHF/UHF systems. All we can do is try out various theories — we tend not to favour total system failure or spontaneous detonation at present rather some more limited scenario. We shall keep you posted as to our thoughts and progress. Needless to say, everyone here is somewhat disappointed after the efforts of the last months and such a flawless start to UO-11's life! We still have faith, though!

Martin Sweeting UoSAT Programme Manager + UoS Team

PRELIMINARY UoSAT-B TELEMETRY DATA FORMAT. 19/2/84

Currently incomplete. All equations subject to change. Checksummed TLM format. Channel format is:

nnvvvc
nn — channel number
vvv — value
c — checksum

To compute checksum, convert each ASCII character into the binary, eg "A", which comes in as 41H becomes OAH. Exclusive OR all 5 values. Convert the lower four bits of the XOR answer to an ASCII hex digit, eg OBH becomes 42H, this character is the checksum.

A 1Eh cursor home character preceeds UoSAT-2 in each frame. The number after UoSAT-2 on the header line is the date in YYMMDDWHHMMSS, W is day of week, 0-6. The date below is bogus, it wasn't initialised after the S/C was powered up. The S/C was in the Bldg 836 clean room when this frame was taken. Some of the data is valid.

UoSAT-2 0000010040621

00515101039B020112030102040235050 28F060251070315080
32909026D
10515011000012005613010314000515000416000717736418 7
36B19736A
20515321032222667723000124001725000726077427736728 7
368297369
30515231016532284F330000340007350305360005377366383
53E39353F
40763641000542688043000744000045056246000247736148 3
53949346C
50561751017252661653263154111055852F560003573067587
36F593539
602105617BC762800C630041641003651C0E661405673406680
00E69000F

Non-checksummed frame. Everything is the same as above except that the checksum character becomes a space. This format is more pleasing to the human eye.

UoSAT-2 0000010040630

00515 01035 02010 03010 04023 05028 06025 07031 08032
09026 10515 11000 12004 13010 14000 15000 16000 17736
18736 19736 20515 21032 22667 23000 24001 25000 26077
27736 28736 29736 30515 31016 32284 33000 34000 35028
36000 37736 38353 39353 40763 41000 42688 43000 44000
45055 46000 47736 48353 49346 50561 51017 52661 53256
54111 55852 56000 57306 58736 59353 60210 617BC 62800
63004 64100 651C0 66140 67340 68000 69000

A dwell format is also available, in which only selected channels are displayed. The channels can come out in any order, in checksummed or non-checkedsummed format. The UoSAT-2 and time stamp may or may not be included.

Chan #	Name	Equation
00	Solar array current -Y	I=1.9(516-N) mA
01	Nav mag X axis	H=(0.1485N-68) uT
02	Nav mag Z axis	H=(0.1523N-69.3) uT
03	Nav mag Y axis	H=(0.1507N-69) uT
04	Sun sensor #1	
05	Sun sensor #2	
06	Sun sensor #3	
07	Sun sensor #4	
08	Sun sensor #5	
09	Sun sensor #6	
10	Solar array current +Y	I=1.9(516-N) mA
11	Nav mag (Wing) temp	T=(330-N)/3.45 C
12	Horizon sensor	
13	Spare (tbd)	
14	DCE RAMUNIT current	
15	DCE CPU current	
16	DCE GMEM current	
17	Facet temp +X	T=(480-N)/5 C
18	Facet temp +Y	T=(480-N)/5 C
19	Facet temp +Z	T=(480-N)/5 C
20	Solar array current -X	I=1.9(516-N) mA
21	+10 V line current	I=0.97N mA
22	PCM voltage +10 V	V=0.015N V
23	P/W logic current (+5 V)	I=0.14 (N‡=500)
24	P/W Geiger current (+14 V)	I=0.21N mA
25	P/W Elec sp. curr (+10 V)	I=0.096N mA
26	P/W Elec sp. curr (-10 V)	I=0.093 mA
27	Facet temp -X	T=(480-N)/5 C
28	Facet temp -Y	T=(480-N)/5 C
29	Facet temp -Z	T=(480-N)/5 C
30	Solar array current +X	1=1.9(516-N) mA
31	-10 V line current	I=0.48N mA
32	PCM voltage -10 V	V=0.036N V
33	1802 comp curr (+10 V)	I=0.21N mA
34	Digitalker current (+5 V)	I=0.13N mA (N‡=500)
35	145 MHz beacon power O/P	P=(2.5N—275) mW (N‡=200)
36	145 MHz beacon current	I=0.22N mA
37	145 MHz beacon temp	T=(480-N)/5 C
38	Command decoder temp (+Y)	T=480-N) /5 C
39	Telemetry temp (+X)	T=(480-N)/5 C
40	Solar array voltage (+30 V)	V=(0.1N-51.6) V
41	+5 V line current	I=0.97N mA
42	PCM voltage +5 V	V=0.0084N V
43	DSR current (+5 V)	I=0.21N mA (n‡=500)
44	Command RX current	I=0.92N mA
45	435 MHz beacon power O/P	P=(2.5N-200) mW N‡175
46	435 MHz beacon current	I=0.44N mA
47	435 MHz beacon temp	T=(480-N)/5 C
48	P/W temp (-X)	T=(480-N)/5 C
49	BCR temp (-Y)	T=(480-N)/5 C
50	Battery charge/dischg curr	I=8.8(N-513) mA
51	+14 V line current	I-5N mA
52	Battery voltage (+14 V)	V=0.21N V
53	Battery cell volts (MUX)	See below
54	Telemetry current (+10 V)	I=0.02N mA
55	2.4 GHz beacon power O/P mW	P=((N+50)*2)/480
56	2.4 GHz beacon current	I=0.45N mA
57	Battery temp	T=(480-N)/5 C
58	2.4 GHz beacon temp	T=(480-N)/5 C
59	CCD imager temp	T=(480-N)/5 C
60-67	Status points 1-96	

MULTIPLEXED BATTERY SCHEME (CHANNEL 53)

Six consecutive TLM frames will carry the total volts, the following ten frames will be individual cells, starting with cell #10. Each cell has its own equation, but are not as yet defined.

UoSAT-B STATUS POINTS

Here are the status points as supplied by Surrey, and updated at VAFB. This is preliminary and subject to change. Some items are undefined. These values are encoded in TLM channels 60-67, 12 points per channel, eg channel 60 has status bits 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12 in that order. Thus, 60400 means status point 2 is set, 1, and 3-12 are reset.

UoSAT-B STATUS POINTS — Prelim 20/2/84

1	145 MHz General Downlink Power	Off/On
2	435 MHz Engineering Downlink Power	Off/On
3	2401 MHz Engineering Downlink Power	Off/On
4	Telemetry Channel Mode Select	Run/Dwell
5	Telemetry Channel Dwell Address Load	Off/On
6	Telemetry Channel Dwell Address Source	Gnd/ Computer
7	Primary Spacecraft Computer Power	Off/On
8	Primary Spacecraft Computer Error Count	Bit-1
9	Primary Spacecraft Computer Error Count	Bit-2
10	Primary Spacecraft Computer Bootstrap	Prom/Uart
11	Primary Spacecraft Computer Errot Count	Bit-3
12	Primary Spacecraft Computer Bootstrap	A/B
13	Gravity Gradient Boom Deployment Pyros	Safe/Arm
14	Gravity Gradient Boom Deployment Pyros	Hold/Fire
15	Gravity Gradient Boom Deployment	Safe/Arm
16	Gravity Gradient Boom Deployment	Hold/Deploy
17	Gravity Gradient Boom Deployment	Extd/Retract
18	Attitude Control Magnetorquers	Safe/Arm
19	Attitude Control Magnetorquer -X	On/Off
20	Attitude Control Magnetorquer -Y	On/Off
21	Attitude Control Magnetorquer -Z	On/Off
22	Attitude Control Magnetorquer	Rev/Forward
23	435 MHz PSK Mode	NRZI/NRZIC
24	2401MHz PSK Mode	NRZI/NRZIC
25	Attitude Control Magnetorquers	Hi/Lo Power
26	Digitalker Expt Power	Off/On
27	CCD CAMERA Expt Power	Off/On
28	CCD Camera Expt Integration Period	Bit 0
29	CCD Camera Expt Integration Period	Bit 1
30	CCD Camera Expt Video Amp Gain	Bit 0
31	CCD Camera Expt Video Amp Gain	Bit 1
32	DSR Power	Off/On
33	DSR Mode	Read/Write
34	DSR Mode	Run/Reset
35	Radiation Detectors Geiger-A EHT Power	Off/On
36	Radiation Detectors Geiger-B EHT Power	Off/On
37	Radiation Detectors Geiger-C EHT Power	Off/On
38	Electron Spectrometer Sensor EHT Power	Off/On
39	DCE Experiment Power	Off/On
40	DCE Expt	Reset/Run
41	DCE Expt PROM Select	A/B
42	DCE Expt CPU Clock Rate Select	0.9/1.8 MHz
43	Navigation Magnetometer Power	Off/On
44	Space Dust Experiment Power	Off/On
45	Spare Dust Experiment Level Select	Bit 0
46	BCR Status	0/1
47	435 MHz Downlink Modulation Select	AFSK/PSK
48	2401 MHz Downlink Modulation Select	AFSK/PSK
49		
50		
51		
52		
53		
54	Command Watchdog Enable	
55	Command Watchdog Reset	
56	145 MHz Downlink Data Select	A
57	145 MHz Downlink Data Select	B
58	145 MHz Downlink Data Select	C
59	145 MHz Downlink Data Select	D
60	145 MHz Downlink Data Select	E
61	145 MHz Downlink Data Select	F
62	145 MHz Downlink Data Rate	A
63	145 MHz Downlink Data Rate	B
64	435 MHz Downlink Data Rate	A
65	435 MHz Downlink Data Rate	B
66	435 MHz Downlink Data Rate	C
67	Particle/Wavecounter Control	Count/Reset
68	Downlink Lockout	Enable/ Disab
69		
70		
71		
72		
73	P/W Channel Plate Control Bit 0	
74	P/W Channel Plate Control Bit 1	
75	P/W Channel Plate Control Bit 2	
76	Space Dust	
77	Space Dust	
78	Space Dust	
79	Space Dust	
80	Space Dust	
81	Space Dust	
82	Space Dust	
83	Space Dust	
84	DSR Write Cycle Complete	
85	1802 CWO Output	
86	1802 TLM Port (MSB)	
87	1802 TLM Port	
88	1802 TLM Port	
89	1802 TLM Port	
90	1802 TLM Port	
91	1802 TLM Port	
92	1802 TLM Port	
93	1802 TLM Port	
94	1802 TLM Port	
95	1802 TLM Port	
96	1802 TLM Port (LSB)	

SATELLITE ACTIVITY FOR PERIOD 29th DECEMBER 1983 TO 31st JANUARY 1984

LAUNCHES

NUMBER	NAME	NATION	DATE OF LAUNCH	INITIAL DATA PERIOD MINS	APOGEE KM	PERIGEE KM	INCLN DEG	REMARKS
1983-127A	COSMOS 1519	USSR	29 Dec	Data for 83-127A to C				Launched by one rocket. SN
1983-127B	COSMOS 1520	USSR	29 Dec	674	19100		64.8	
1983-127C	COSMOS 1521	USSR	29 Dec					
1984-001A	COSMOS 1522	USSR	5 Jan					
1984-001B	COSMOS 1523	USSR	5 Jan					
1984-001C	COSMOS 1524	USSR	5 Jan	Data for 84-001A to 001H				Launched by one rocket
1984-001D	COSMOS 1525	USSR	5 Jan					
1984-001E	COSMOS 1526	USSR	5 Jan	115	1510	1449	74	SI
1984-001F	COSMOS 1527	USSR	5 Jan					
1984-001G	COSMOS 1528	USSR	5 Jan					
1984-001H	COSMOS 1529	USSR	5 Jan					
1984-002A	COSMOS 1530	USSR	11 Jan					
1984-003A	COSMOS 1531	USSR	11 Jan					
1984-004A	COSMOS 1532	USSR	13 Jan	89.8	382	178	67.2	TM SI
1984-005A	BS-2A	Japan	23 Jan	635.7	36038	188	28.39	For TV relays
1984-006A	COSMOS 1533	USSR	26 Jan	90.4	382	235	70.4	TM SI
1984-007A	COSMOS 1534	USSR	26 Jan	94.5	519	470	65.8	TM SI
1984-008A	PRC 14	CHINA	29 Jan					
1984-009A	xxx	-	31 Jan					

Legend: SN — Space Navigation Systems
SI — Scientific Instruments
TM — Telemetry

BS-2A is designed to develop TV and broadcast technology. Transmitting frequencies and output powers are 11.91928 GHz at 100 W, 11.96600 GHz at 100 W, 11.70299 GHz at 0.1 W and 2276.99 MHz at 1-3 W.

2 RE-ENTRIES

During the review period no satellites re-entered or decayed; 34 other objects decayed.

OSCAR-10 APOGEES MAY 1984

APRIL 1984 OSCAR-10 APOGEES

DATE	DAY #	ORBIT #	APOGEE UTC HHMM:SS	SATELLITE CO-ORDINATES LAT DEG	LONG DEG	BEAM HEADINGS SYDNEY AZ DEG	SYDNEY EL DEG	ADELAIDE AZ DEG	ADELAIDE EL DEG	PERTH AZ DEG	PERTH EL DEG
MAY 1	122	665	1920:27	26	221	348	21	1	22	24	20
2	123	667	1839:30	26	211	357	22	10	21	33	16
3	124	669	1758:33	26	202	7	22	20	19	40	11
4	125	671	1717:36	26	192	17	20	28	15	47	5
5	126	673	1636:39	26	183	26	17	36	11	53	-1
6	127	675	1555:43	26	174	34	13	44	6		
7	128	677	1514:46	26	164	41	8	50	0		
8	129	679	1433:49	26	155	48	3				
9	130										
10	131										
11	132										
12	133	686	0010:30	26	302					309	2
	133	688	2329:33	26	292					316	8
13	134	690	2248:37	26	283			307	-3	323	13
14	135	692	2207:39	26	274			313	3	331	18
15	136	694	2126:43	26	264	311	2	320	9	339	21
16	137	696	2045:46	26	255	318	8	328	13	349	23
17	138	698	2004:50	26	245	325	13	336	17	359	24
18	139	700	1923:52	26	236	333	17	345	20	9	24
19	140	702	1842:56	26	226	342	20	355	21	18	22
20	141	704	1801:59	26	217	351	22	4	21	27	19
21	142	706	1721:03	26	208	1	22	14	20	36	14
22	143	708	1640:05	26	198	11	22	23	17	43	9
23	144	710	1559:09	26	189	20	19	32	14	49	3
24	145	712	1518:12	26	179	29	16	39	9		
25	146	714	1437:15	26	170	37	11	46	4		
26	147	716	1356:18	26	161	44	6	52	-2		
27	148	718	1315:22	26	151	51	0				
28	149										
29	150	723	2333.00	26	308					306	-2
30	151	725	2252:02	26	298					311	4
31	152	727	2211:06	26	289					318	10

STATUS REPORT — OSCAR-11 20/3/84

At the time of preparing these notes the status of OSCAR-11 is unchanged. Despite continued commanding no downlink signals have been obtained. However reports from the Orroral Valley tracking centre near Canberra indicate that the theory put forward (as above) in respect to an unstable 2 metre beacon transmitter may in fact be correct. Signals, albeit extremely weak, have been heard around the 145.825 beacon frequency by Darryl VK1DF and his associates at that facility. To substantiate those findings attempts are being made to acquire the services of the Joddrel Bank facility in the UK. Nonetheless the UoSAT team are extremely optimistic that they will be able to recover OSCAR-11 in the foreseeable future.

AR

J.I.L. INTRODUCES PROFESSIONAL ULTRA-SUPER MULTIBAND RADIO/COMPUTERIZED PROGRAMMABLE SCANNER

UNINTERRUPTED FREQUENCY COVERAGE
150 KHz—3.7 GHz WITH RF CONVERTER

SX-400 SERIES

SCANNING MONITOR RECEIVER

New JIL SX-400 synthesized scanner designed expressly for commercial/professional monitor users that demand features not found in ordinary equipment...

OPTIONALLY EQUIPPED RF CONVERTER/COVERAGE 150 KHz-26 MHz AND 520 MHz—3.7 GHz

- CHANNEL SPACE SELECT SWITCHES (12 SWs. 26 MHz—520 MHz)
- MOMENTARY RECALL OF ANY MEMORY CHANNEL, CONVENIENT 2-WAY SCANNING
- QUICK SEARCH WITH PRIORITY CHANNEL
- CONTINUOUS 26—520 MHz GENERAL-COVERAGE, WIDER COVERAGE (150 KHz—3.7 GHz) WITH RF CONVERTER (OPTIONAL)
- WITH DATA INTERFACE (OPTIONAL), COMPUTER CONTROLLED • MEMORY CHANNEL EXPANSION, • 20 CH HIGH-SPEED REPROGRAMMING • RECORDING OF REQUENCY, VOICE AND TIME • AND ALL FUNCTIONS REMOTE CONTROLLABLE
- BUILT-IN ANL (AUTOMATIC NOISE LIMITER) EFFECTIVELY SUPPRESSES AM-PULSE-TYPE NOISE
- HI-FI RECEPTION OF FM/TV BROADCASTS BY NARROW/WIDE SWITCHING OF FM IF FILTER BANDWIDTH
- CONTINUOUS SEEKING WITHOUT INTERRUPTIONS BY BIRDIES
- STOP MODE CHANGE SWITCH ENABLES SCANNING AND SEEKING FOR MODULATED SIGNALS
- AC ADAPTOR (OPTIONAL)

SPECIFICATIONS (SX-400)

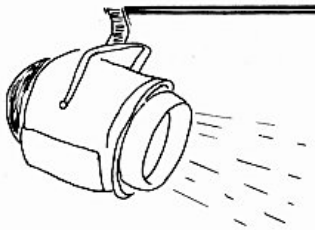
- **Frequency Range:** 26-520 MHz
- **Channel Space:** VHF 5 KHz or 6.25 KHz, UHF 10 KHz or 12.5 KHz
- **Sensitivity:** VHF FM 0.5μV 12dB S/N, AM 1.0μV 10dB S/N
  UHF FM 0.5μV 12dB S/N, AM 2.0μV 10dB S/N
- **Selectivity:** FM 60dB at ±15 KHz, AM 60dB at ±10 KHz
- **Memory Channels:** 20 channels
- **Dimensions:** 300(W)×90(H)×210(D)mm
- **Weight:** 3.5 Kgs.

VIC. Vicom International Pty. Ltd.
P.O. Box 366, South Melbourne, 3205
Telephone: 62 6931 Telex AA36935

NSW. Vicom International Pty. Ltd.
118 Alfred Street, Milsons Point, 2061
Telephone: 436 2766 Telex AA70619

NZ. Malvicom International Ltd.
P.O. Box 31-009, Lower Hutt,
New Zealand.
Telephone: 69 7625 Telex: (74)3334

VICOM



SPOTLIGHT ON SWLing

Robin Harwood, VK7RH
5 Helen Street, Launceston, Tas 7250

In the Letters to the Editor section of the March edition of "AR", I noticed comments from VK2BMZ whether current frequency schedule information could possibly be included in this column. However, I wish to point out that many broadcasters only choose their frequencies and times a few weeks before each broadcasting period commences. As I usually write this column about five weeks before you receive your copy, it is difficult to include this information as it very often does not become available until after the period commences.

Let me illustrate this with the period M-84. As you are probably aware, the first Sunday in March is when stations make alterations to their operating frequencies to compensate for propagational and seasonal variations. Then on the 25th March, most of Western Europe went on to Summer Time. This meant that stations with programming for that area, brought their times forward by one hour as programmes are broadcast according to local time instead of Universal Co-ordinated Time (UTC). This caused some re-arrangement of frequencies. Then on the first of April, the USSR advanced their time by one hour throughout the USSR. As well, the Soviet broadcasters also alter their frequencies on that date. The Soviets rarely give their alterations in channels or operational hours in advance, so frequency co-ordinators in the various stations certainly have an extremely busy time in the M-84 period trying to acquire clear channels.

So you can see that sometimes including frequency information in here, is somewhat impractical. There are some bulletins and newsletters that do list unusual frequency alterations or schedule changes in their pages. The Southern Cross DX Club usually lists in May and November English language broadcasts audible in Australia. Also, I point out that most international stations are only too pleased to forward information and schedules for their listeners. Stations with broadcasts targeted for this region rarely alter their operating frequencies, although some minor time variations can sometimes be made. This is primarily because they have built up a steady audience over the years. Broadcasts are usually at the same UTC time all the year round, unlike the situation in Europe.

Radio Japan increased their English and Japanese language output from 37½ hours to 40 hours a day. The Regional General Services will be extended by thirty minutes to one hour in both Japanese and English. NHK also will be utilising the facilities of Africa No 1 in Moyabi, Gabon to relay their programmes and improve audibility within that continent. Radio HCJB in Quito, Ecuador are planning to upgrade their 49 metre band antennas to handle the 500 kW transmitter. This will provide clearer signals to Australasia and Europe. The existing antenna on 49 metres is the oldest antenna they have and requires substantial repair and maintenance and can only handle 100 kW. The total cost is $80,000 and the station is confident that they can raise the funding from their supporters in Europe and Australia.

Icom have released a new receiver — the IC-R-71 general coverage receiver. The receiver, they claim will provide superior performance to the R-70 as it has some innovative new features. It has keyboard frequency entry plus thirty two programmable memories. A novel innovation is the IC-RC11 Infrared Remote Controller, a handheld wireless controller that permits control of frequency, mode, memory, scanning and audio level without touching the receiver.

The receiver will tune from 100 kHz to 30 MHz and has AM/SSB/RTTY and CW. FM is an optional extra. It has scanning facilities as well as a selectable AGC and noise blanker. It has three tuning rates -10 Hz, 50 Hz and 1 kHz. Optional CW filters at 250 and 500 Hz are available as well as a high grade crystal filter tuned at 455 kHz. The R71A does not have Receiver Incremental Tuning (RIT) but does have both Passband tuning and an IF Notch Filter. Another interesting option as far as I am concerned is the synthesized voice frequency readout which is operable from the remote controller or the receiver itself. I should also point out that the RC11 remote controller is an optional extra. Sounds like a very interesting receiver and look forward to seeing the reviews when they come out.

I recently saw an article in the October 1983 issue of the Canadian Amateur. It was on problems encountered by amateurs in Calgary, Alberta from cable television leakages. Because of the multiplicity of programmes and channels available, some cable networks decided to radiate signals in allocations not normally assigned to television broadcasting eg 108 to 174 MHz. Theoretically there should not be any problems if the cables were well shielded and well insulated.

However, the Alberta operators became rather sloppy and buried or dropped their cable feeds at an average depth of only 1½ in! Also the harsh winter climate in Calgary would presumably contribute to the cable breakages if the feeds were only a few inches below the soil surface. Yet the CATV engineers claimed that signals along the cable feed would be too weak if leakages occured.

The companies eventually admitted that there were leakages or breakages along the cables, yet blamed individuals working around their homes and said that they were not to blame. The Calgary amateurs were naturally incensed that the cable systems were operating on a frequency exclusively allocated in Canada and internationally to the Amateur Service. If amateurs operated outside of their allocations they face the risk of fines and suspension of their license. Yet CATV systems are in fact radiating signals and operating in other allocations.

Because of the shoddy nature of the cable drops, it was only to be expected that there would be breakthrough from 2 metres. The cable owners claimed that the 2 metre allocation was shared and that where interference from amateurs was being experienced, the amateurs should refrain from causing interference. With a potential 200 000 cable subscribers compared to the 350 amateurs around Calgary, it is clear who would have more clout politically.

Calgary amateurs were asked to drive around the city and monitor 145.25 MHz where the cable signal was being radiated, searching for hot spots where possible leakages or breakages had occurred and report same. As other cable companies throughout North America are commencing to establish mid-band converter channels, Calgary amateurs are urging their brethren in other areas to be on the alert to intrusions by CATV systems especially on 2 metres. A cable leakage can be heard several metres away from the offending cable drop.

Fortunately, there has been increasing evidence, particularly within the United States, of viewer disenchantment of television programmes. Cable subscribers often have identical programmes on air simultaneously. For example, a 26 channel carrier may have half the channels with identical programmes, which does narrow down the choice available to the subscriber. It is not surprising, therefore, that the number of television viewers watching the three major TV networks has dropped to seventy four percent in 1982-83 compared to a high of ninety one percent in 1976-77.

The networks are aware that their audiences are restive and have been trying to regain viewers and ratings. With falling ratings, goes a consequent drop in commercial sponsorship and less revenue. Some cable programme packages have become financially unviable and the number in 1983 declined from forty two to thirty seven with others possibly headed the same way. Therefore some cable networks are amalgamating to produce better quality programming as well as reduce their deficits. About six percent of cable subscribers cancel their cable programmes monthly. Subscription TV, which utilises a scrambled signal from a local TV station has been less successful than predicted.

In a recent interview with the US News and World Report, Mr Ted Turner (whose yachting exploits are well known to Australians) a leading CATV network executive, predicted that cable systems would have about seventy percent penetration within America and Direct Broadcasting Satellites would only have ten to fifteen percent of the market. Naturally, he

predicted an expansion in services provided from CATV, with more enlightening and informative programming than was being presently provided. Mr Turner's network has largely concentrated on News programming twenty four hours a day. Yet the reality is that people within North America are increasingly turning their sets off, dissatisfied with what they see.

Recently the Managing Director of the BBC External Broadcasting Service put forward the idea of developing a Television Service similar to that of the World Service on radio. Programmes would be offered via satellite to cable networks or other interested broadcasters. Initially it would be confined to a few hours daily, mainly consisting of thirty minute news programmes which would be radiated over the cable systems. Mr Douglas Muggeridge thought that Direct Broadcasting Satellites would be not viable, considering the economic outlay an average viewer would have to fork out. It is presently viable to feed material via existing facilities to cable or domestic networks. It will be interesting to see what does happen.

Well, that is all for this month. Until next time, the best of DXing and 73 — Robin VK7RH.

AR

MOORABBIN AND DISTRICT RADIO CLUB

The Moorabbin and District Radio Club invites visitors to come to the Tuesday morning meetings at the M&DRC Clubrooms 10-12 AM.

Natternight and General Meeting with guestspeakers are held on respective 1st and 3rd Fridays of each month.

You can contact the Secretary, Alf Chandler VK3LC, or come to the rooms at 30 Turner Street, Highett, where the action is.

Contributed by John Hill VK3WZ.

AR

NEW TRANSMITTER FOR CH 8 — GEELONG

Testing has begun on the new transmitter for Ch 8. Most of the individual modules have been constructed and individually tested, and shortly each item will be assembled onto the chassis and will begin preliminary operation from Mount Anakie running about 10 W.

After a test period the repeater will be taken off air and the "boots" attached to bring it up to the full design power of 80 W.

from GARC NEWS, March 1984

AR

BRISBANE NORTH RADIO CLUB in the JOHN MOYLE MEMORIAL FIELD DAY CONTEST

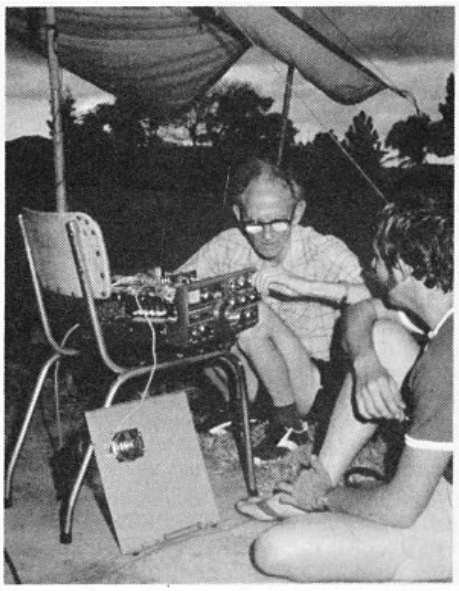
Brian Mennis, VK4XS
11 Jethro Street, Aspley, Qld 4034

Brisbane North Radio Club again took an active part in the John Moyle Memorial Field Day Contest, but this year the Club's intentions were somewhat different from previous years. Previously, the intention was to win, and these intentions were realised. This year, while the Club still hoped to win in its section, the emphasis shifted more to being a public display of amateur radio in operation in the hope of attracting new members to the Club.

The local "SUBURBAN" newspaper was very co-operative and published a short article on the Field Day during the previous week, and advised that the public was invited to Padua College grounds, the site of the Club's operations.

Padua College is an almost ideal location for the "John Moyle" as there is ample playground space to allow for separation of the various antennae, together with some very convenient flagpoles and high fences for supporting masts, antennae etc. It is located on a hill giving a very good uninterrupted 360 degree coverage for VHF signals. Angus Garland, VK4AGQ, who was the Club's organiser for the day, was able to get the Club operating on all bands from 160 metres up to 70 centimetres.

A number of people visited the site during the six hours of operation, and quite a high level of interest was shown. While this has yet to translate into actual club members (although one came as a visitor to the first meeting after the field day) the seeds have been planted and it is hoped that the club and amateur radio will benefit in the future.



Above: A running repair. Jack VK4AGY digs into a rig. Far Left: Location of the 15m operations in the centre of the cricket pitch at Padua College. Centre: John VK4APZ operates whilst Roger VK4KIE adjusts the 10m beam. Bottom: Alf VK4OL and John VK4APZ on 10m

VK2 MINI BULLETIN

Jeff Pages, VK2BYY
VK2 MINI BULLETIN EDITOR
PO Box 1066, Parramatta, NSW 2150

COUNCIL REPORT

Divisional Council met on Friday the 9th of March at Amateur Radio House, this being the last meeting of the 1983/84 Council. Twenty three new members of the Division were accepted. Federal Councillor Stephen Pall VK2PS presented a report covering the Federal Executive meeting, the joint WIA/DOC meeting, maritime mobile nets, import duty, amateur exams, phone patching and the Federal Convention. Tim Mills VK2ZTM presented a report on the repeater situation, and considerable discussion took place regarding the proposed relocation of the Canberra City 70 cm repeater.

The lease for the downstairs room at Amateur Radio House was signed and returned to the honorary solicitor for registration.

Arrangements for the Annual General Meeting were discussed. Council noted several typographical errors in both the AGM booklet and agenda.

Council gratefully accepted the offer by the Liverpool and Districts Amateur Radio Club to host the 10th Conference of Clubs. It was resolved that a "bring-your-own" barbecue event be held monthly at the Dural property, to be organised by the Dural Committee. Details will be given on the broadcasts.

LIBRARY

The Divisional librarian, Aub Topp VK2AXT, wishes to thank the following amateurs who responded to requests for books and magazines. They are VK2AVY, VK2II, VK2AXN, VK2AXR, VK2FD, VK2EMC, VK2ZAB and VK2PS, as well as a number of anonimous donations. Missing from the library shelves are 73 magazine July 1978, ARRL Handbook for 1943 and some issues of 1982 QSTs. Any help in replacing these would be appreciated.

FIREWORKS NIGHT

The annual fireworks display at Dural will take place on Saturday the 2nd of June. This year, dinner will not be provided because of catering and preparation difficulties in previous years. Tickets are now available from the Divisional Office at $4 for adults, $2 for children or $10 for a family of two adults and their children.

MORSE PRACTICE SESSIONS

Members are reminded that the VK2 Division presents a daily Morse practice broadcast at 0930 UTC or 7.30 PM EST, on a frequency of 3.550 MHz. Operators are asked to kindly keep clear of this frequency plus or minus 5 kHz during both our session and that from VK5 which follows on the same frequency, as many listeners are using relatively broad receivers. If you wish to offer your assistance to this most beneficial service contact the Slow Morse Co-ordinator, Vince Roberts VK2PRB, or the Divisional Office.

1984-85 COUNCIL

At the close of nominations for Council on the 29th February, six had been received, this being one less than the seven required for Council. As a result no ballot was required, and the Council for 1984-85 is as follows: Susan Brown VK2BSB, Michael Burns VK2AUE, Peter Jeremy VK2PJ, Tim Mills VK2ZTM, Jeffrey Pages VK2BYY and Maxwell Smith VK2YKF. The Council will be co-opting a seventh member to fill the vacancy.

Council positions will be decided at the first meeting, held in April.

As this is my last Mini Bulletin, I would like to take this opportunity to thank all those who have assisted in the production of this column, in particular the magazine Editor and staff.

73 from Jeff VK2BYY

AR

FIVE-EIGHTH WAVE

Jennifer Warrington, VK5ANW
59 Albert Street, Clarence Gardens, SA 5039

Visitors to the Burley-Griffen Building may have noticed that, since Christmas, a very nice glass fronted cabinet has appeared in one of the alcoves in the meeting hall. The cabinet is the work of Peter VK5NPC and was commissioned by the Divisional Council so that we can now display our Historical Memorabilia. Jack VK5JK will change the display from time to time and if you have anything, in the way of photographs or documents, that you would like to donate or merely loan to the display for a period, I'm sure that Jack would be delighted to hear from you. Also some of the photographs that we have do not name the people or places on them, so if you are an Old Timer and recognise the unnamed faces and places, please let Jack know so that the information is not lost forever. Once again, our very grateful thanks to Peter for all his efforts.

I am pleased to be able to announce that we have a new Intruder Watch Co-Ordinator in VK5, Lindsay Collins VK5GZ has volunteered after giving the matter some consideration. Congratulations and our grateful thanks for accepting this important position, Lindsay.

Now, we are still looking for someone to become Programme-Organiser. The job entails, keeping your ears open for suitable speakers (and asking for suggestions from the membership) contacting these people, to book and confirm dates (up to 9 pa but could be a lot less). Attending the monthly General Meetings (no Council meetings, or extras) to welcome the speaker and make sure that he or she has everything they need (projector, black-board, etc). And last but not least to advertise the forthcoming meetings on the Broadcast and in the Journal or this column. So there you are, a most rewarding job which will entail only a few hours a month of your time and one meeting which you probably attend anyway! Whilst we are on this subject, and as this seems to be my day for thanking willing volunteers, I must thank Staunton (Mac) VK5ZH for the marvellous job he has done over the past three years, we certainly have had some varied and interesting speakers.

DIARY DATES

1st May — AGM (date changed because of Easter/Anzac Hols).
22nd May — Buy and Sell meeting.
NB there will be no meeting on the fifth Tues instead there will be a Buy and Sell on the fourth Tues (otherwise there would be three meetings this month!) This will also give the new Programme Organiser a chance to organise a speaker for —
26th June . . .

AR

VK3 WIA NOTES

Jim Linton, VK3PC
DIVISIONAL PRESIDENT
VK3 DIVISION

QSL BUREAUX POLICY

Details on how the computerised Inwards QSL Bureau operates were inserted last month in AR magazine and the new system has received praise from members.

This Division can be proud of both its Inwards and Outwards Bureaux.

In this time of inflation and rising costs the Division is providing a free QSL bureaux service to members.

Unlike some other bureaux which make a charge for each card handled.

But this free service is only available to financial Victorian Division members.

A member of this division can live anywhere in the world — a number live outside VK3.

The aim is to provide free and efficient QSL bureaux — delays are kept to a minimum.

In the case of inwards cards a person registered with the Inwards Bureau can choose the frequency they want to receive cards (see insert AR April.)

It's Outwards QSL Bureau policy that no card is held more than three months before being despatched — of course cards for places with lots of activity (JA, W, etc) are usually cleared a lot sooner.

When next you hear how long it takes for cards to get through the Bureaux — remember the delay is not happening at the Victorian Division Bureaux.

The full rules and procedures under which the Bureaux operate are too lengthy to be included in this column — but are available on request.

Inwards QSL Manager Barbara Gray VK3BYK (plus helpers) and Outwards QSL Manager Des Clarke VK3DES are providing a vital service to members.

THEORY REVISION WEEKENDS

Are you a candidate for the May theory exams — or perhaps you know someone intending to sit these exams?

To help candidates for both the AOCP and Novice exams the division is holding special theory revision weekends — these continue to prove extremely popular attracting people from throughout Victoria and even interstate.

The AOCP revision weekend will be held 12th and 13th May, while the Novice weekend is 5th and 6th May.

To enrol or make further inquiries contact the Education Officer, Wireless Institute, 412 Brunswick Street, Fitzroy 3065, or telephone (03) 417 3535.

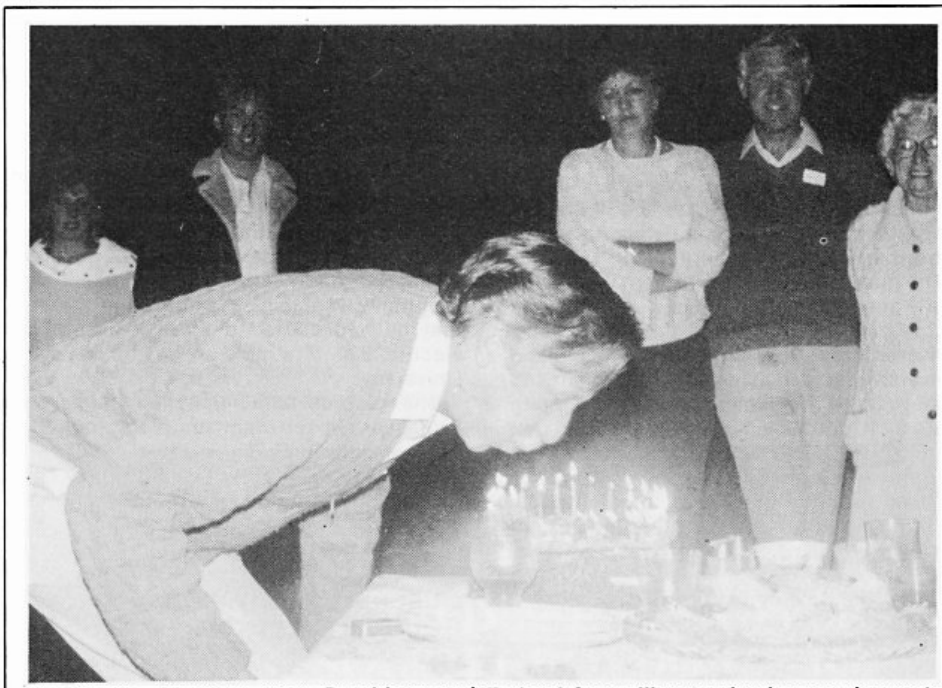
ANNUAL GENERAL MEETING

The Vic Div AGM will be held at the Wireless Institute Centre on Wednesday 9th May, starting 8 PM (see insert AR April).

At this meeting a review of the Institute's financial status, activities and future plans is given.

As with any company AGM there are formal matters in accordance with the Articles of Association (Constitution) — and members have an opportunity to quiz the Council or speak their mind.

Apart from the business to be dealt with the AGM night has a real social atmosphere.



Alan Noble VK3BBM, Past President and Federal Councillor received a surprise party for his fiftieth birthday. The party was attended by relatives and friends including many Victorian Divisional councillors.

Photograph courtesy Mal LeMaistre VK3KSA

WHAT IS VTAC???

This WIA Vic Div Committee was once known as the repeater committee — but the name change reflects its expanded role in Wireless Institute affairs.

Its function is to provide expert advice and assistance to the Vic Div Council on technical matters, including the installation, operation and upgrading of repeaters and beacons.

VTAC is available to the Broadcast Committee, WICEN or any Victorian group needing to consult on technical matters relating to amateur radio.

Through the VTAC co-ordinator Peter Mill VK3ZPP it liaises with the WIA Federal Technical Advisory Committee on band plans and federal policy matters.

Next month this column will describe a little known band of WIA volunteers which has achieved outstanding results — the RTTY Fixers Group.

AR

QSP

NEW AMATEUR CENTRE

4Z4SV is the call of the new Amateur Radio Centre in the Shoresh Village Hotel in Jerusalem. The new station is made available to all visiting amateurs from around the world, enabling them to contact anyone they wish while in Israel. Zvi "Ozzie" Osrin, 4X4CW, Israel's first licensed amateur, was given the honour of sending out the first "CQ" at the dedication of 4Z4SV.

Ozzie served in South Africa's Air Force in WWII and in the fledgling Israel Air Force in 1949, at which time he became Israel's No 1 licensed amateur. Initiator of the club project was Alon Tavor, 4Z4ZB, licence holder since he was ten years old and a disabled veteran of the Sinai battlefield where he lost an eye and a leg in 1975. Alon now works with handicapped children. He has formed a radio club for them and trains them toward becoming amateur radio licencees.

The dedication of 4Z4SV at the Shoresh was also attended by Joe Marsey, N2JM, of Rochester, New York, now retired in Israel; Joe Kasser, G3ZCZ, a recent immigrant; Ron Ronen, G4GKO, a well-known telecommunications expert and Joe Bonnett, W5III, of Dallas, Texas.

from World Radio, February 1984

AR

VK4 WIA NOTES

Bud Pounsett, VK4QY
Box 638, GPO, Brisbane, Qld 4001

Alan Shawsmith, VK4SS, who is Divisional Historian, 1930 — , has been digging around and came up with this delightful story.

Professor Alex Gibson of the Queensland University (then in George Street, City of Brisbane) was reported to be an active amateur around 1920. No callsign exists in pre-WW2 lists, so maybe he simply allotted himself one without bothering the PMG.

The good professor was fond of telling this one — against himself. Brisbane's City Electric Light Company prior to and during the 1920s, delivered only 220 V DC so the Queensland University decided to install its own plant and so have its own independent private lighting system. It purchased a diesel engine, belt coupled to a 220 V DC generator and a public ceremony was arranged for the equipment's official commencement of duty. It was arranged for the Governor of Queensland (probably William Lennon as Administrator or Major Sir Hamilton Gould Adams, the governor) to do the honours.

The day arrived and still the machine would not function. The professor, a man of initiative (he must have been an amateur) made a last minute modification to the brushes in the generator, thereby turning it into a motor, capable of working from the Brisbane City Supply of 220 V DC.

The governor was asked to make his speech and throw a switch which, unbeknown to him, connected the city supply to the modified generator. He did this at the appropriate moment and the generator, acting as a motor spun the diesel flywheel. The governor beamed broadly at the achievement and eventually went to his grave wrongly thinking that he had started the first diesel-driven electric 220 V supply at the Queensland University.

The records show that soon after this, Professor Gibson went south and took up a position with BHP. So, whatever his call was as an amateur in VK4, seems to have gone with him. Does anyone know any further details of Professor Gibson?

QUEENSLAND DIVISIONAL COUNCIL EXECUTIVE, 1984

The March meeting of council elected John Aarsse, VK4QA, president for the coming divisional year. Theo Marks, VK4MU, was retained as secretary as was Ross Mutzelburg, VK4AQK, in the important position of treasurer. Ross is also assistant to Federal Councillor, Guy Minter, VK4ZXZ.

John, VK4QA, needs no introduction, he has held the presidential seat in previous years and has held several other posts with the division.

BARCFEST 84

Queensland members have already been informed of this annual event (the second) by our news broadcasts and our VK4 Division publication, QTC.

Visitors to our Sunshine State, and we get an influx at this time of the year, will be very welcome to come along and meet the VK4 gang.

This event is organised by the Brisbane Amateur Radio Club and is held at Indooroopilly State High School, Ward Street, Indooroopilly. It takes place this year on 12th May commencing at 9.00 AM until 4.30 PM. There will be displays, lectures, disposals, a homebrew contest and lots of interest for the rest of the family. Admission is $1.50 single or family.

AR

FORWARD BIAS

VK1 DIVISION

John MacPhee VK1KJM
36 Kavel Street, Torrens, ACT 2607

On Monday 27th February, 1984, the WIA ACT Division held its Annual General Meeting at the Griffen Centre, Civic. The attendance at the meeting was very good and it was nice to see some of the Old Timers at the meeting.

Elections for the positions on the Executive and Committee were held and the following are the results of that election.

Alan Hawes VK1KAL: President, Broadcast Manager and Public Officer.

Ken Ray VK1KEN: Vice President, Repeater and Beacon Liaison.

John MacPhee VK1KJM: Vice President, Forward Bias Editor and Education Officer.

Kevin Olds VK1OK: Treasurer, ATV and Wicen Liaison.

Richard Jenkins VK1UE: Secretary.

Phil Rayner VK1PJ: VK1 Awards Manager and Property Officer.

Graham Parsons VK1GP: Intruder Watch Co-ordinator and Meeting Co-ordinator.

Andrew Davis VK1DA: Field Day Co-ordinator.

Fred Robertson-Mudie VK1MM: Federal Councillor and DOC Liaison.

George Brzostowski VK1GB: Alternate Federal Councillor.

Jock Fisher VK1LF: QSL Inwards.

Ted Pearce VK1AOP: QSL Outwards.

Eric Piraner VK1EP: Book Sales.

Ron Henderson VK1RH: Divisional Historian.

Ted Radcliffe VK1TR: Novice Instructor.

Glen Torr VK1GT: AOCP Instructor.

On behalf of the President, I wish the new Committee every success for the 1984-1985 year. Don't forget that this Division will again be taking radio to the public on ITU Day. We hope that this year's display will be the best yet, and if last year is any guideline, we will all be very busy.

Till next time. 73

John MacPhee VK1KJM
Forward Bias Editor
AR

Corrections

The "Experimental Amateur" article in April magazine inadvertently had the incorrect numbers on the graphs.

Fig 1 should be Fig 3, Fig 2 should be Fig 1 and Fig 3 should be Fig 2.

Also the "Emotronics" advertisement had an incorrect phone number at the bottom of the page. It should read 211 0988.

Apologies to all

— 39 AND HOLDING —

OR

— THE OLDEST SWINGER IN TOWN —

The bachelor OOT amateur who related this story asked not to be named. Besides AR his second passion is ballroom dancing — even at seventy years of age he never misses his weekly "hop".

Many years ago, just as the dance ended, a very heavy rain storm broke over the hall. Being chivalrous and gallant, he offered to take his young dancing partner home — where she invited him in for a late supper. As they were sipping coffee the young lady's mother, in dressing gown, appeared from the bedroom and fixed the OOT with a curious and belligerent eye. The daughter, sensing all was not well, tried to calm the scene by saying,

"Mother, you don't mind me asking Bob in for coffee, do you?"

"Yes," replied her mother, "if he's the same man who brought me home twenty five years ago, *I mind very much!*"

Alan Shawsmith VK4SS
AR

TASMANIAN NEWS

Max Hardstaff, VK7KMF
8 Glenburn Crescent,
Sulphur Creek, Tas 7316

"HAMFEST 84"

The AGM of the Tasmanian Division of the WIA was held at Penguin on the NW coast on 17th March, and in conjunction with it a general get-together was organised by Max VK7KMF from the NW Branch, under the title of "HAMFEST 84".

A display in the Penguin Town Hall was the headquarters on both days. Displays totalled eight. On both days Geoff VK7WZ, Tony VK7AX, Syd VK7SF, Andrew VK7ZAP, Peter Westenhoff and Greg Stammers had displays, and there was a combined stand of members. There were two special displays, on Saturday Coastal Computers, and on Sunday DOC.

All displays were extremely well presented and consisted of ATV equipment from Mt Duncan, RTTY, Slow Scan and Video all set up and operating. Coastal Computers had computer demonstrations going at their stand and on Sunday the DOC stand was fully equipped. A CW contest was organised and controlled by DOC. One section was won by Geoff VK7WZ for speed and the other Bill VK7AV for accuracy.

There was another stand displaying the Home Brew Competition, and this was won by Phillip VK7JJ, with a Portable ATV Transmitter designed and built by him, (not from a kit). Last but by no means least VK7ZLB had a stand representing FM Radio.

Saturday evening was devoted to a Dinner at the Neptune Hotel in Penguin, and had an attendance of thirty three adults and six children. The meal was considered very good by all, and entertainment organised by Arthur VK7SE was very well accepted. Arthur sang and played guitar, as did Kim Hardstaff, and they were accompanied by James (Arthur's son) on drums.

In all the week-end went well and was enjoyed by all who attended.

Congratulations and thank you to all involved for a fine effort.

AR

1926 POSTCARD

Card courtesy Rosemary Hutchinson

LETTERS TO THE EDITOR

Any opinion expressed under this heading is the individual opinion of the writer and does not necessarily coincide with that of the publisher.

SPECIAL NET

Members of the 3570 net, controlled by Roy VK4VPR at 6.00 AM daily, found that they were observers to a multi birth!

Roy and his wife Beryl have two pure bred German Shepard dogs — Satan and Juno — and Juno had decided that Saturday morning would be the best time to have her pups.

Roy, amongst his other many talents, is the holder of a first class certificate in first aid, and all preparations had been made for the coming event. Commentaries by Roy and Beryl were very tastefully done and even Mrs Grundy would not have taken offence. A mike was set up in a strategic position and we were able to hear their first cries upon entering this world. Signals of 5-9 were recorded throughout the state.

Eventually with the score at four — three males and one female, we all retired rather exhausted but happy.

Next morning we found that Juno, apparently enjoying all the attention, decided to produce two more. Score now four males and two females.

Callsigns have not yet been allocated, but anyone wishing to make any suggestions please contact Roy VK4VPR.

Those present included VK4s — VMO, NNA, VAT, VLI and VEO.

Yours truly, 73
Tom VK4VEO
1/1 Cooloon Place
Algester, Qld 4115
AR

FT 102 OWNERS TAKE HEED

Does your pride and joy suffer from high noise level, overloading especially on the lower bands 3.5 and 1.8 MHz, poor selectivity and all round poor performance compared to other receivers.?

Then I suggest you look for the following. In desperation I worked back from the RF stage through the mixer, 8 MHz IF stage until I reached the 455 kHz IF stage. Examination of the IF PCB, it was found there was two neat holes where R84, which is at the base of the input transformer T09, which feeds into Q2010 should have been. You will find R84 alongside Test Point 10.

Install the required 100K resistor and now see how your receiver performs.

It is not an isolated case. My transceiver is number 2M071002 and Dave Scott VK5DS number is 2M071052, so suggest anyone who has a FT102 in that bracket of serial numbers to check for the possible missing R84.

C H Castle VK5KL
29 Turnbull Road
Enfield 5085
AR

SURPLUS QSLs

Subsequent to working the VU7WCY DX-pedition to Laccadives, last December, I duly sent off my direct QSLs with the usual SAEs and IRCs. A few days ago, I received my first card in reply.

Enclosed with my card, were also cards for several other VK stations. In the absence of any instructions or explanation, I presume that these are meant to be distributed to the respective operators.

As I do not personally know these calls, and most of them are not listed in my 1982/83 Australian Call Book, would you please publish these in your magazine. I will be happy to forward the respective cards to their proper destinations, on the receipt of a SASE (post card size, please).

The cards which I hold are for the following stations: VK3OT, VK3XV, VK3CBO, VK3VSL, VK9XT (blank card), VK9YT (blank card).

Furthermore, I am sorry to have to say this, but the standard of QSL'ing, especially for a rare DX contact, such as this, is not what one would normally expect.

On the cards, there are omissions and alterations to the written entries, one shows a frequency which is not allocated for use by the particular class of the callsign and two cards are blank, with the exception of the operators call and name.

I cannot feel but sorry for those, who for these reasons, may have their cards rejected for DXCC purposes.

Yours truly
Steve King VK3ZY
1 Kalmia Avenue
Mt Waverley, Vic 3149

Editor's Note:
Blank cards are not on for DX credit. Blank cards discredit the whole operation. Thanks for drawing attention to them.

AR

WHAT I WOULD LIKE!!

Three items I would find most interesting in AR (would that I could write them!!).

1. I have found it impossible to correlate the wind loading of beams to the torque specifications of rotators, a simple thing if one knew how.

2. DX on 80 metres. This is becoming popular, it's difficult, especially up here with QRN. I have a "DX edge" which is most helpful — a really good antenna, which type?

3. Bands, just where do the VK bands overlap with other countries?

I would appreciate your consideration of these suggestions.

A G Cory VK2DTH
"Belara"
North Star, NSW 2408

Editor's Note:
The editor prefers articles. Maybe this will inspire an author.

AR

CONTESTS

We write to you regarding the publishing of the rules and specimen log for the RD contest. We would like to request that the material be vetted before publication in an effort to eliminate the many printer's errors that have occured in the past. Also, we would like to see all of the information and specimen log appear in the same issue as this would be much more convenient.

I hope that you will give these suggestions some consideration before the next RD contest and look forward to seeing more readable rules this year!

73
P B Sinclair VK6EE
Secretary
Southern Electronics Group
Albany WA

Editor's Note:
Contest material is printed as received from the Federal Contest Manager.

AR

IONOSPHERIC INFORMATION

It does not seem to be generally known that the Commonwealth Department of Science and Technology has an Ionospheric Prediction Service (IPS) and that a recorded message giving sunspot numbers and other valuable information may be heard at any time by ringing (02) 269 8614.

From time to time one hears people over the air giving ionospheric information which they claim to have received from WWV. I doubt it. I think that these people get their information from the IPS over the landline — the same as I do!

It would be well for the amateur fraternity at large to realise that this valuable and up-to-date information regarding the ionosphere is available to any member of the public for the price of a telephone call.

Yours faithfully,
R C Yates
Box 74
Charlestown, NSW 2290

Editor's Note:
WWV Information is broadcast at 18 minutes past the hour.

AR

PROTEST!!

I wish to register a strong protest against the proposal to filch part of the 14 MHz CW section. The present CW section is very crowded, RTTY will ruin the band worldwide. My contention is that a small group of so called "amateurs" should not make decisions that will affect all without conducting a poll of all interested parties.

Amateur radio is a great hobby and it is a pity we have to battle our own institute to preserve the few rights left to us.

These days there is too much talk about the need to increase our numbers. Why debase the currency any further, their numbers may help a few purveyers of Japanese black boxes towards their second million, but do very little to advance our hobby.

Now that CB has died on the vine have the big guns shifted to RTTY? I am not anti any form of communication (including RTTY) indeed you could regard this letter as an appeal for that rarest quality of all, "common sense".

George Woodward VK2YJ
11/27 Gundaroo St
Villawood 2163

Editor's Note:
This letter has been shortened. It is hoped that discussion of this matter will have taken place at the Federal Convention.

AR

QRQ DX??

On the evening of the 12th March, 1984 I had been browsing around the 20 m band fully tuned up for any call. My equipment is a Yaesu FT101ZD into a Yaesu ATU FC902 into a horizontal dipole, two traps capable of frequencies 15, 20, 40, 80 m height about 15.24 m at one end, the other about 12.19 m, length 32 m. The power indicator was switched to 250 watts.

It was nearing 0825 UTC when I decided to head for the house, to listen to Dr Who, but I first tuned over the 15 m band listening for anything unusual. I heard a JE3 call "CQ" so as a last thought decided to give him a call and he answered with a "go-ahead" RST 5/3/9 in Kobe. I then realised that I was still tuned on the 20 m band and that there were nil indications of power on the FT101ZD or on the ATU Power/SWR meters.

Asking the JE3 to stand-by I then re-tuned the set leaving the ATU on "thru direct" showing power about 80 watts, at this point the phone started to ring. I then decided to cut short the QSO, but not until the JE3 had given me 5/7/9.

I answered the phone and finally got to see Dr Who about 0837.

It puzzled me how the DX station was able to read

me on NIL indications of power, which I guess must have been generated via the pre-amp, then amp to antenna. It shows that one has to be careful with transceivers. My experience over the last five years that I have been an amateur is nearly 5000 DX QSOs, all CW, and I really enjoy the "hunt". After being with DCA for thirty seven years, Aeradio/Communications, I am now well retired and over seventy years of age.

Jim Brinkman VK2IS ex VK2ID
61 Gundagai Street,
Coffs Harbour, NSW 2450
AR

ANTARCTICA

I believe the following information may be of interest to Amateur Radio readers.

It concerns Mr Walter H Hannam who was one of the first amateur wireless operators in Australia.

In 1911 he went with Douglas Mawson's expedition to the Antarctic as wireless operator and he was the first to link Antarctica to Australia by wireless.

He next joined the AIF and saw service in France in the 1914/18 World War.

On his return in about 1918 he set up an amateur wireless transmitter — date uncertain.

He operated from Mosman, Sydney and later from Terrigal NSW and was still active up to his death.

I believe him to be one of the first amateur operators in Australia and know he was in contact with others worldwide.

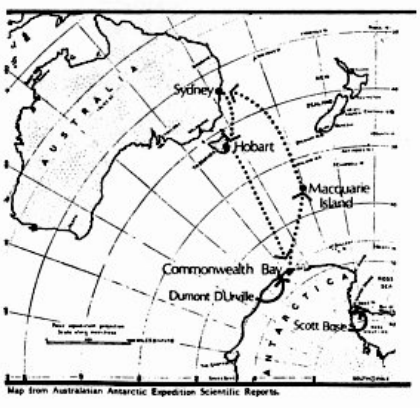
He had many contacts with New Zealand and made a trip there to visit them. He was passed from one to another with VIP treatment.

He constructed a wireless receiver for my father about 1920. We plugged in different coils to receive the two existing transmitters, namely 2FC (Farmers) and 2BL.

Dr Vining and Mr Blunt are organising "Project Blizzard" whose objectives are as follows . . .

The scope of work planned by Project Blizzard includes: repair of structural members; weather-proofing of the building by replacing the external cladding with new Baltic Pine boarding identical to the original; preservation of existing materials; documentation; and clearing the hut of snow and ice. The objective of the restoration project will be to return the hut to a state similar to its original condition when the men of the Australasian Antarctic Expedition occupied the site.

Through the success of this venture and the restoration of Mawson's Hut, we hope to remind people of the achievements of yesterdays explorers and the works of the Australasian Antarctic Expedition.



Map from Australasian Antarctic Expedition Scientific Reports.

Briefly they hope to raise money for two private expeditions to the Antarctic site of Mawson's Hut, with the object of restoring it after seventy years of severe weathering. They are asking interested people to become "Associate Members" of this expedition at a cost of $25 each.

My interest in the project stems from the fact that I am the eldest nephew of Walter Hannam and feel it would be a fitting tribute to Walter Hannam's work with amateur radio, to support Dr Vining and Mr Blunt's efforts to reconstruct Mawson's Hut at Cape Dennison on Commonwealth Bay.

The address for interested person's is: Project Blizzard, GPO Box 4773, Sydney, NSW 2001.

Yours faithfully
John W D Bathgate
9 Johnson Street
Nemmyha NSW 2340
AR

NO SURPRISE

The concern expressed in letters by Drew Diamond VK3XU and Alan Shawsmith VK4SS comes as no surprise.

The criticism that these decisions were taken by a group who apparently do not operate CW is probably correct but then these meddlers are far too busy planning our future for us, to spend any time at all on air, where the venting of their proposals could attract on air criticism and thus, above all things is to be avoided and if encountered, is to be deplored as most unsportsmanlike.

Since it is, of necessity, the Federal Executive who interface or liaison with the DOC we are dependant upon these representatives to hold firm to the directives of the Federal Council which meets only once per year in these fast moving episodes of time. It is therefore the Federal Councillors who are responsible for these epoch making decisions to thoroughly commercialise amateur radio to the last dollar and cent.

Commercialism and sponsorship are the key words in amateur radio organisations, but do individual members approve of it?

Do we have too many "amateur" professionals and their "professional" amateur devotees? Unduly influencing the councils of the WIA? Is it essential that the machine must displace the human in all things?

Amateur radio, to be enjoyed by humans, must be of humanity, by humanity, for humanity, not for machinery, the sale of which enriches those of "amateur" pretensions.

The amateur does not have to justify his existence by opening the systems management attitudes of commercial communications organisations.

Nor need we slavishly follow the space invaders in every aspect of their communications.

I and others support Messrs Diamond and Shawsmith in their concern. We, too, look forward into the future of amateur radio. We see not just one, but several futures for it. Whichever it is, depends now, upon rational, cautious planning by the amateur organisations around the world.

Machinery cannot guarantee our continuence, only we humans can do anything about that.

Yours sincerely
George Harmer VK4XW
35 Rutland Street
Coorparoo, Qld 4151
AR

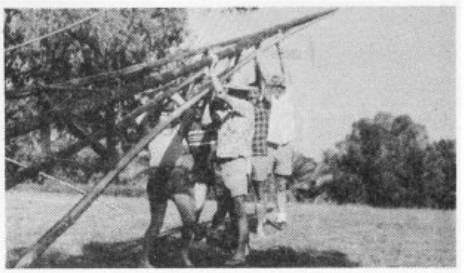
TEN DOLLAR QUAD

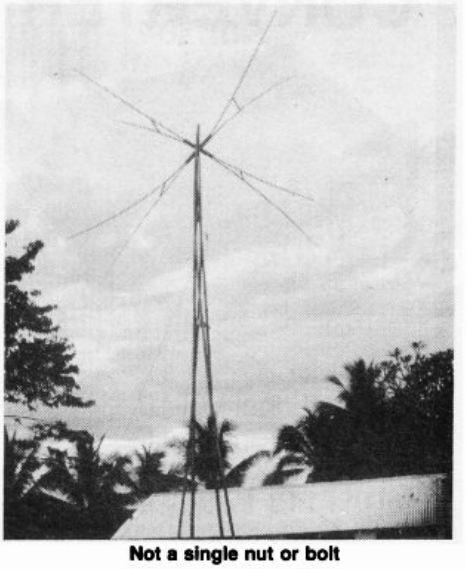
My home callsign is VK2DBH, but up here I got P29TP although I asked for my old callsign P29RP which I had during our earlier stay here 1977-81.

I carried the old 707 up here in a black cloth carrybag especially made for it by my XYL, with a heavy and wide strap which went over my shoulder. Nobody queried or even looked at the set either getting on or off the aircraft whereas if I had had it counted with luggage the extra 8 kg or so would have cost quite a bit of excess baggage rate.

My main reason for bringing the 707 here was to keep in touch with folk back home, as this place is far from Post Office and telephones, both of which are a rugged route, 35 km away. I originally put up a G5RV between two trees, running east-west, but although I got through on 15 and 20 metres, QSOs were anything but pleasant from weak signals both ways.

So I built a 2 element quad for 20 and 15, of which I enclose a picture. You will see that it is made up on bamboo (called mambu locally), and the element members were wired to a couple of pieces of 10 x 5 cm


Up she goes


Not a single nut or bolt

halved across one another at right angles. I ran some thin nylon string around to keep the elements square and also across between the driven element and reflector rods to keep spacing correct. You will notice from the photo that there are bits of bamboo wired across between the pairs of arms as spreaders.

The mast consists of four larger lengths of bamboo, about 75 mm at base and about 13 m long. I tied these together with wire also, using pieces of old 76 x 50 mm lying around, with wire twitches to hold all of them together. The result is a set of four legs about two metres apart at ground level which "stands" steadily with no wind. The ropes are only to stop the odd wind blowing it over. The quad is also wired to the mast, and points just east of south for best conditions to VK4, 2 and 3. However, I get VK5 very well and have in fact had skeds with VK5FW and ZL2KJ, both ex P29-ers and friends of mine here in 1980.

I suppose that a fifth length of heavy bamboo in the middle could have been put in to act as a rotating member, but I did not think the extra trouble was worth it as I have so many QSOs a week with friends in VK that the odd DX using the G5RV satisfies me quite well.

The main thing about the quad is that all up it cost me under $10! The balun was wound on a short bit of 25 mm plastic water pipe out of some split figure 8 flex, the tifilar system out of Orr's book. It has given me great satisfaction with normally 5 x 9 contacts all over eastern VK. When I return home in April the whole thing has been willed to a would-be amateur here who, with two others, wants to study for the exams as a result of impressions gained of the usefulness and pleasure of QSOs with home.

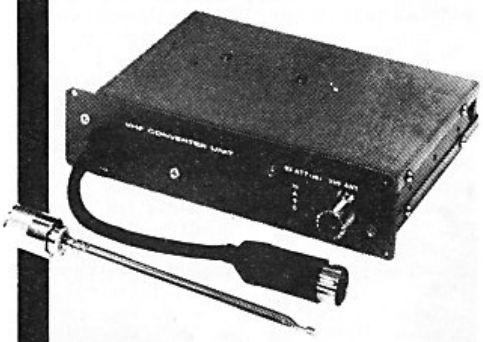
So, if anyone wants to use aluminium rod, dowell sticks, nuts and bolts in profusion etc etc to build a tower and quad, I can say: "try a bit of wire and bamboo".

Ronald Pain P29TP
South Sea Evangelical Church
Brugam, PO Maprik, via Wewak
Papua New Guinea.
AR

KENWOOD

THE WORLD AT YOUR FINGERTIPS

VC-10 CONVERTER



The optional VC-10 VHF converter unit provides coverage of the 118-174 MHz frequency range.

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The R-2000 provides outstanding performance through use of micro-processor controlled operating functions, allowing maximum flexibility and ease of operation throughout its operating range. An all mode receiver, it covers 150 kHz – 30 MHz in 30 bands, on SSB, CW, AM, and FM. Key features include digital VFO's, ten memories that store frequency, band, and mode information, memory scan, programmable band scan, digital display with 24 hour dual clock, plus timer, and a host of other features to enhance the excitement of listening stations around the world.

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TX-43X HF TRANSCEIVER

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Ph. (02) 428 1455.

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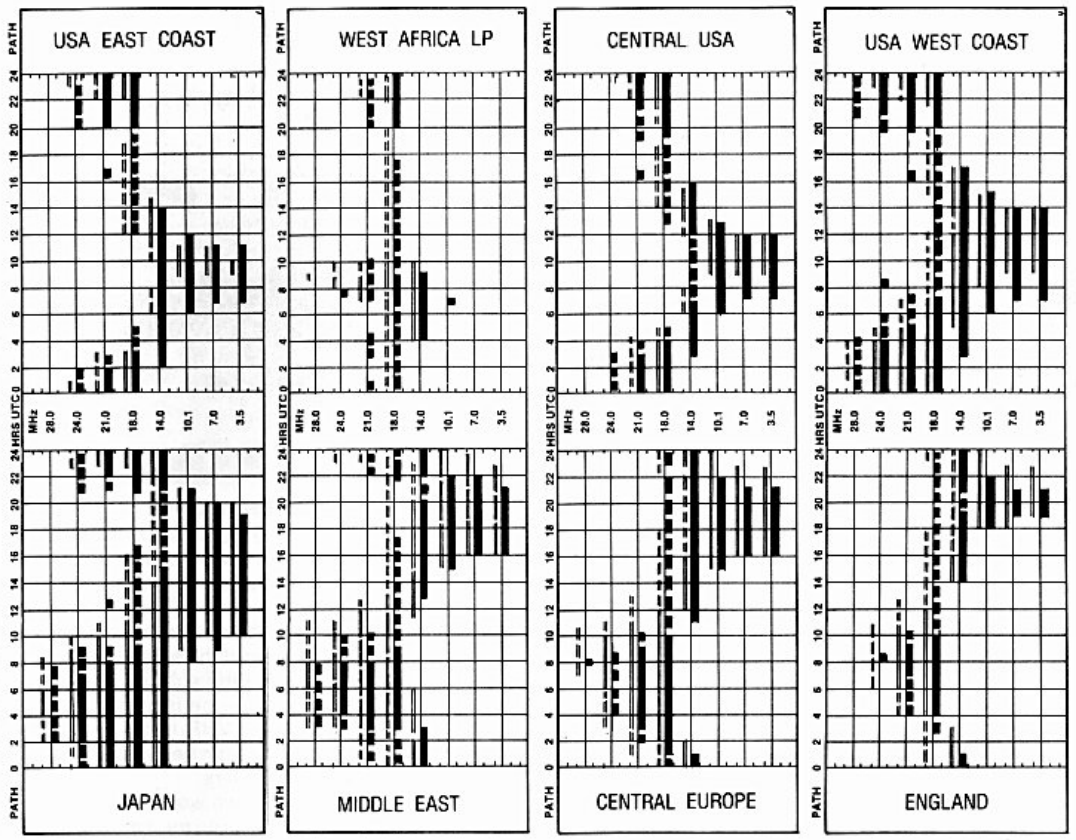
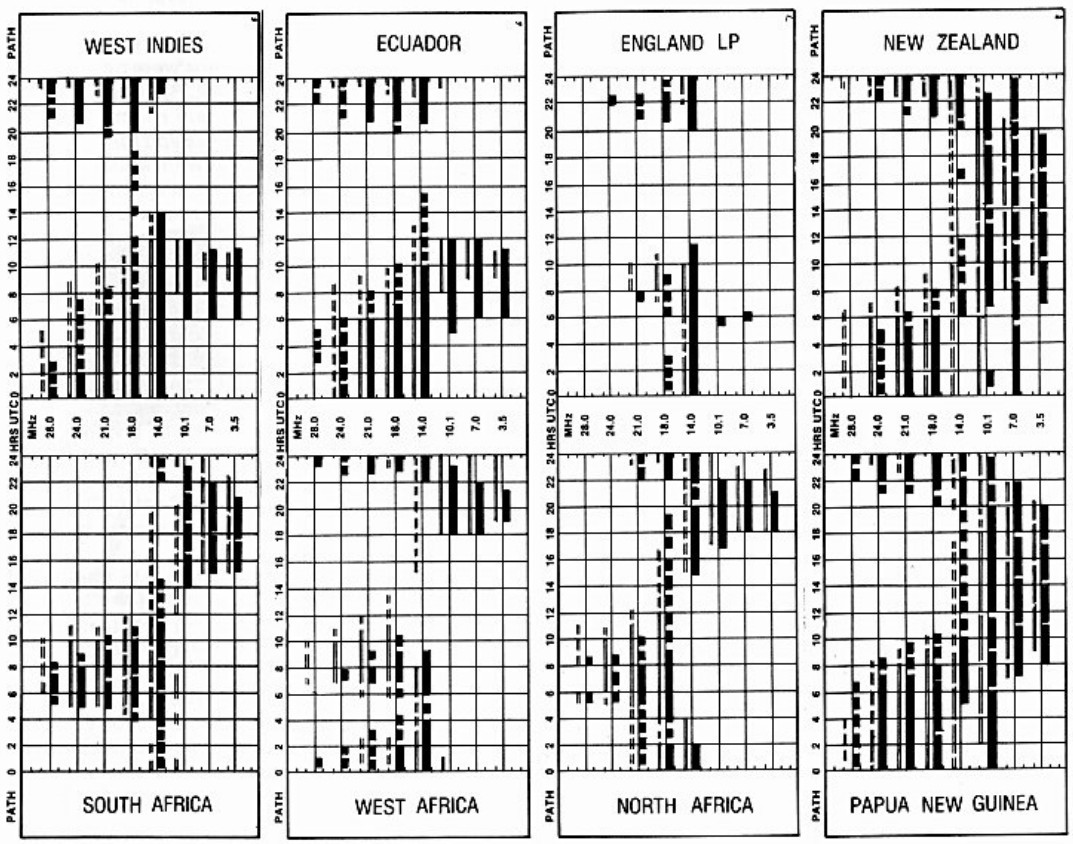
IONOSPHERIC PREDICTIONS

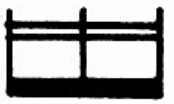
Len Poynter VK3BYE





LEGEND

From West Australia (PERTH).
From East Australia (CANBERRA).



Better than 50% of the month but not every day (continuous lines).

Less than 50% of the month (short broken lines).

Mixed Mode: Dependent on angle of radiation (long broken lines).

Paths: Unless otherwise indicated (ie: LP = Long Path) all paths are Short Path.

PREDICTIONS REPRODUCED COURTESY OF THE DEPARTMENT OF SCIENCE AND ENVIRONMENT– IPS SYDNEY.

ALL TIMES IN UNIVERSAL TIME CO-ORDINATED.

Obituaries

COLIN MILTON CARTER VK2CC

Col died suddenly, at his home, on 20th January aged sixty eight years. Born in the Young district of NSW, he trained in the field of geology. This early training was to set the course for many of his activities in later life. He was a foundation member of the Kempsey Speleological Society, the local Astronomical Society and the Macleay Development Association, the forerunner of the Kempsey Macleay Tourist Association. The Carter Cave, named in his honour, is a fitting tribute to his many years of caving. As well as these activities, Col was a practising Mason and a keen photographer, naturalist, lapidary and gardener.

By profession, he was an AWA trained Broadcast Engineer and served with 2BH Broken Hill, 2LM Lismore, 4GY Gympie and 2KM Kempsey (now 2MC). He joined the ranks of amateur radio in 1947 and has held the callsigns of VK2ACD, VK4CR and VK2CC.

In spite of his busy life, Col had always time to think of the welfare of others. He was active in his support for "Rathgar", the United Protestant Association's Children's Home at Grafton, and was an Elder of the Presbyterian Church.

Col Carter was a man with more knowledge on a wider range of subjects than anyone I have met. Deepest sympathy is extended to his widow, Jean, and to his family, Bruce, Margaret, Harry and Stanley by his many friends, both on and off air.

Rex Bannerman VK2DLQ

AR

HENRY E HILDER VK4HH

It is with deep regret, that I report the passing of Henry, VK4HH, aged sixty five years.

Henry became a Silent Key on Saturday, 25th February, 1984.

He had just returned to his Motel room in Toowoomba after purchasing a new piece of amateur gear, when he apparently had a massive heart attack. He was discovered next morning.

The President and other members of the WIA council of Queensland, and other amateurs, attended his funeral.

He served in a Signals unit during WWII at Morotai. Upon discharge, he was employed by the Fire Brigade for thirty six years, attaining the rank of first class fireman.

Henry received his AOCP in 1946 and was an enthusiastic radio amateur, and was of great help to many aspiring amateurs. He belonged to the following Radio Clubs; Darling Downs RC, Sunshine Coast ARC, Gold Coast Radio Society, The Brisbane VHF Group, as well as being an ardent member of the WIA. Henry also conducted the 2 metre callback each Sunday morning for the WIA Broadcast.

Henry was a kindly man, and a very good friend to many. We all offer our condolences to his widow Phyllis.

Claud Singleton VK4UX

Harry, as he was often known to his mates of early days, passed away suddenly in the fullness of his life on the evening of 25th February, 1984. He and his YF Phyllis had travelled from Brisbane to Toowoomba on the Darling Downs to socialise with members of the local club.

He was one of Queensland's most popular amateurs and will be especially missed by the Sunshine Coast VHF Group, where he had established himself as the Net Controller.

Many OOTs of pre and immediate post war days will remember Harry, with nostalgia, as a breezy, cheerful, enthusiastic member of the fraternity: one whose presence would guarantee to brighten any group. He was a regular visitor to this writer's shack. Locomotion was his beloved, well used, well serviced two wheels Harley Davidson: onto this he added a side long box in which to carry and court the YL who was to become his YF Phyllis (see also Thumbnail Sketches). He was a man of many parts, completely building his own homes and most adept at homebrewing very efficient 2 m and 70 cm beams.

May I express my condolences in the form of a poem, which was originally written to honour all SKs and I hope also meets the sentiments of the Sunshine Coast VHF Group to which Harry belonged.

— SILENT KEYS — IN CONTEMPLATION —

In spirit they have not died
But have simply QSY'd.
Old soldiers may just QSB,
But the Ham's appointed place
Is on a higher frequency.

Where DX'ers need no mode, rig
To communicate a sig,
Where QRN and static rife
Is absent — as is QRM,
Cause of such ignoble strife.

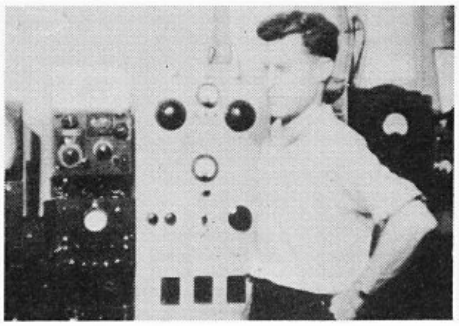
— And while Earth's ops contemplate
They "from up the log" await
On the infinite band,
Where DX is eternal
And brotherhood, the kinship grand.

Alan Shawsmith VK4SS

AR

THUMBNAIL SKETCHES

Alan Shawsmith, VK4SS
35 Whynot Street, West End, Qld 4101



HENRY E HILDER, VK4HH

Again, it was the humble crystal set that helped determine Henry's destiny in life; in work, war and play it has been communications all the way for Henry — or almost. Now retired, much of his time is spent relaxing up on Queensland's Sunshine Coast. However, even amid the sun, sand and surf, AR is not neglected — he is still very active and busy on UHF and VHF, running a regular weekly 2 metre and 70 cm net which often has a large number of callers.

To quote Henry's own words, *"It all started when a neighbour showed me a crystal set. By the time I was twelve years old, several had been built — and I've never given up the hobby since."*

He joined the VK4 WIA as a student member in 1934 when the meetings were held at Celtic Chambers, George Street, Brisbane. To quote Henry again, *"In the main room there were sets of long wooden tables and forms. Spaced at intervals on the tables were Morse keys and sets of head phones to accommodate one dozen students — plus a set for the instructors."* (Fred, VK4RF was one who taught code during this period.) Also in the WIA meeting room stood a rack and panel transmitter which, as far as this writer can recall, was never put into use. I wonder how many OTs still remember this set-up.

During WWII VK4HH saw service in AIF Signals Field Units both as a W/O and technician. On his return to civilian life he joined the Brisbane City Fire Brigade, where he soon graduated to the position of Watch-room or Communications Control Officer. He retired in 1981 after thirty six years unbroken service.

Henry's main interest in AR these latter years has been in that part of the spectrum above 10 metres, building and testing UHF and VHF antennas. He only occasionally ventures down into the HF bands. All his equipment was homebrewed until 1974 when an FT780R was installed, followed by an FT101B and FT480R. They are still in use.

The best time to QSO Henry VK4HH these days is any Sunday morning on the 2 metre net.

AR

NOTICE

All copy for inclusion in July 1984 Amateur Radio must arrive at Box 300, Caulfield South, Vic 3162 no later than midday 25th May 1984.

HAMADS

PLEASE NOTE: *If you are advertising items FOR SALE and WANTED please write on separate sheets, including ALL details, eg Name, Address, on both. Please write copy for your Hamad as clearly as possible, preferably typed.*

*** Please insert STD code with phone numbers when you advertise.**

- Eight lines free to all WIA members. $9 per 10 words minimum for non-members.
- Copy in typescript please or in block letters double spaced to PO Box 300, Caulfield South 3162.
- Repeats may be charged at full rates.
- QTHR means address is correct as set out in the WIA current Call Book.

Ordinary Hamads submitted from members who are deemed to be in the general electronics retail and wholesale distributive trades should be certified as referring only to private articles not being resold for merchandising purposes.

TRADE HAMADS

Conditions for commercial advertising are as follows: The rate is $15 for four lines, plus $2 per line (or part thereof) minimum charge $15 pre-payable. Copy is required by the deadline as stated below indexes on page 1.

AMIDON FERROMAGNETIC CORES: Large range for all receiver and transmitter applications. For data and price list send 105 x 220 SASE TO: RJ & US IMPORTS, Box 157, Mortdale, NSW 2223. (No enquiries at office: 11 Macken Street, Oakley, 2223).

WANTED — ACT

MANUALS, CIRCUIT DIAGRAMS OR ARTICLES concerning Eddystone S680/2A HF receiver. Any information welcome. Will pay for photocopies and postage. Christopher VK1NET QTHR. Ph: (062) 54 7960.

WANTED — NSW

MODEL 15 TELEPRINTER preferably with power supply also information to work teletype with Commodore Vic 20 and Kenwood TS520. Info to Peter VK2CQR. Ph: (02) 626 0460.

WANTED — VIC

RTTY MODEM suitable for use with Siemans 100 and Icom 720A. Ken VK3AJU. Ph: (03) 527 9029.

WANTED — QLD

YAESU FL2100Z LINEAR AMPLIFIER. VK4AGL QTHR. Ph: (071) 41 2315.

WANTED — SA

INSTRUCTION MANUAL for Philips type GM2889 sweep and marker generator. Also coax plugs to suit same. VK5ASQ QTHR. Ph: (08) 381 3910.

WANTED — NT

STC RADIOTELEPHONE MTR25 — 191B4 (hi band) working or not. For parts. Trevor VK8CO QTHR. Ph: (089) 27 9256.

FOR SALE — NSW

CE 52 DUO-BANDER 10-15 m 5 element beam antenna. GC. $120. Commodore Vic 20, datacassette, RF modulator, power supply, CW & MUF programmes, original cartons and handbooks. EC. $150. John VK2QY. Ph: (046) 33 8175.

HYGAIN TH3 MK3 Antenna $180. FT207R. Handheld 2 m plus charger $180. Kel Williams VK2EWK, C/-7 Campbell Street, Queanbeyan, NSW 2620.

ICOM IC22S 2 m FM $150. Icom IC502 6 m SSB $125. Kenwood TS520S HF SSB AM CW $450. Ken KP202

2 m handheld with charger $100. Yaesu FT2FB 2 m FM $75. Bird wattmeter with 25D (6 m) and (25 W) (70 cm) slugs $150. Wal VK2DJB Newcastle. Ph: (049) 59 2581 after 6 PM.

ICOM 551D 90 W 6 m transceiver. Icom 251A 10 W 2 m tranceiver. Icom PS20 20 amp 13.8 V DC power supply. Datong audio filter FL2. Icom desk mike SM5. Eimac PA tubes 4CX150A & 4CX250B. Ph: (02) 787 2958.

KENWOOD 2 m all mode TXCVR model TS700A CW FM USB LSB AM 10 W VFO control noise blanker RIT VOX control noise unit mike inst manual 240 VAC and 12 VDC op original carton mint condx. $395 ONO. VK2AS. Ph: (02) 467 1784.

KENWOOD TS830S with spare tubes, manuals $850, VFO230 $260, SP820 $50, MC50 mic $45. All mint condx. VK2WD QTHR. Ph: (02) 42 6080.

REALISTIC DX302 receiver. This radio is in good condition and with original carton. New price was $449.95. 10 kHz to 30 MHz on SSB and AM, wide/narrow selectivity and six band position. Contact Peter VK2CQR. Ph: 626 0460.

SHACK CLEARANCE — Remote VFO 820 $65, Yaesu desk mic YD148 dual inpedance brand new, $25, Dick Smith CW keyer, no paddle, $30, Dick Smith power supply 1.15 amp continuous $10, VK2AOO QTHR. Ph: (063) 68 2283.

TOWER Tune your antenna from the ground! Forty four foot crank-up tilt-over heavy duty galvanised tower fitted with HD winches. Will support 8 sq ft at 80 MPH, more if guyed. Consultants calculations and design of concrete foundation for Council approval. Complete with Ham 3 rotator and control box, 3 element HB 15 m antenna and cables. See working. $650. VK2ACT. Ph: (02) 871 2651.

YAESU FT7 HF TXCVR, EC. No bugs, manual, mic, mobile bracket, small 13.8 V power supply incl. $375. Max VK2GE. Ph: (043) 92 4900.

YAESU FT-101Z. C/W DC/DC convertor & inst book. $500. Ph: (02) 534 3750 evenings only.

FOR SALE — VIC

ALPHA 77SX, the Rolls Royce of linears ampl 1.6-30 MHz. Cont coverage 2-8877 ceramic tubes, rated 6 kW 100% duty cycle, with book, cables, new cond $5300 ONO, normally over $7000. Ceramic metal miniature tubes 4 CX350F for that HF, VHF, UHF linear, rated 700 W. New in box $29 or 4 for $100. VK3BTI QTHR. Ph: 489 0817 after 6 PM.

KENWOOD TS520S transceiver, MC50 mic. Diawa cross needle antenna tuner (NW218) $635. VK3VLT QTHR. Ph: (03) 560 0363.

MORSE TUTOR, Datong D70 — GC $100. Communications receiver, Lafayette HA600A — GC $95. WW11 aircraft receiver AR8 not working $55. Ian VK3KJG. Ph: (053) 82 1895.

NATIONAL (USA) NCX-5 transceiver, 3.5-30 MHz. (5 bands) CW h'bk, SS pwr supply for 180 watts input, mic & mobile mount. $200. Spare tubes inc 3 sets of finals $50. (Original tubes still in use.) Aust version of NCXA pwr suppy (unfinished) $50. Original packing. Yaesu FT7 mint condx, CW mic, h'bk, mob mt. Original packing. $375 ONO. Syd VK3ASC QTHR. Ph: (059) 895 995.

REALISTIC DX-300 digital readout quartz synthesised receiver 10 kHz-30MHz. Hardly ever been used $285. Ph: (052) 48 1410.

SE502 10 m SSB txcvr 12 W PEP 23 Ch C/W SWR meter, noise blanker. Ex performer, new cond, h/book, no mods. 230 V or 12 V. Easy way to get on 10 m. $115. Graeme VK3ADF QTHR. Ph: (03) 277 3382.

SHACK CLEAR OUT. No reasonable offer refused. AWA 50 W FM base station (BS50C) low band, would mod for 6 m, Vinten MTR 20 mobile 2 m (unmod), Philips 1677C/25 W mobile (unmod), AWA CRO 1A56031 (needs attention), Philips CRO GM5659 (needs attention) Cossor CRO 3" model 139 m, "Eminar" 100 watt PA with 5 mic inputs each with sep vol, bass & treble controls, with 2 spkr columns, "Voca" answering system, "ELSE" electronic secretary telephone answerer (auto callsign?). VK3ASI. Ph: (052) 43 5220 AH only.

STAR ST-700 TX, SR-700A rx and matching speaker, $300. Gemtronics GTX-3325 converted to 10 m, covers 28.200 to 28.680, $115. Collection of as new teletype RTTY equipment, 2-M15 printers, 2-M14 tape readers, M FRXD14 reader/reperf, M14 KBD reperf, loop supplies, stepdown transformers, etc, also spares. Steve VK3ZY QTHR. Ph: (03) 277 4748 AH.

TS430S — Full coverage all mode Kenwood amateur transceiver. FM module and mounting bracket included. Brand new and unused. $1100. Ring Graham VK3DPC. Ph: 697 5027 (BH) 690 7947 (AH).

TONO 9000E RTTY TERMINAL plus Toshiba video monitor. First class order. $950. Alf VK3LC QTHR. Ph: (03) 589 5344.

YAESU FRG-7000 COMMUNICATIONS RECEIVER 0.25-29.9 MHz, features a digital frequency display plus 24 hour clock both local and UTC time. A/C, with manual. EC $330. L31187 QTHR. Ph: (03) 277 1874.

YAESU FT200 with FP200 power supply in GC, with new spare finals and other tubes and manual. No mods. $275. Charlie VK3WT QTHR. Ph: (03) 288 5175.

YAESU FT200 EC power supply speaker spare finals manuals original packing. Best offer. Ph: (03) 848 6898.

YAESU FT-207R. 2 metres. Hand held. With accessories. $195. VK3AOT QTHR. Ph: (051) 67 1434.

YAESU FT-7B HF TRANSCEIVER, EC mobile mount, handbook, etc. $350. VK3ZF QTHR. Ph: (03) 435 1697.

FOR SALE — QLD

AEA COMPUTER PATCH INTERFACE model CP-1 complete with software for Apple computer. Power supply etc. One of the best RTTY/CW terminals. Available: split screen operation — memory — etc, covers all speeds TX and RX to 125 WPM. Virtually brand new — with manuals, 4 months old, cost over $450 complete — will sell for only $295. Peter VK4XX. Ph: (075) 33 9362 (AH) or (075) 36 1654 (BH).

DRAKE "C-LINE" TWINS: Incl PSU elegant rig. Unmarked condition. Only reason for sale — need for more portability. $690. (Will consider TS120 trade.) Also available — linear amplifier 400 W. Grounded-grid. Homebrewed CQ design. Well finished. $195 incl freight (Eastern States) or $850 total. VK4SZ QTHR. Ph: (070) 61 3286.

KENWOOD TR9130 all mode 2 m TCVR mint condx. Sierra termination wattmeter 30 W & 120 W 1 GHz MTR151 hibander suit RPTR project 4CX250Bs new & 100% used 4CX350FJs new 2 m 4CX250B final AWA complete, pwr supply avail. 6/40, 4-65 A, sockets, etc. 6/40 pwr supply. PWR TX GE 2000-1800-CT 1800-2000 V 1.75 kVA Antique radios, working, etc. VK4ZJB QTHR. Ph: (07) 269 6647.

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SIEMENS M100 TELEPRINTER — 2 only — one ASR $60. One KSR $45. VK4CB QTHR. Ph: (07) 202 6566.

YAESU 227RA 2 m FM 144-148 MHz scanning transmitter. $245. Swan linear model 1200Z valve type $350. Ph: (079) 78 2010.

FOR SALE — SA

AZDEN PCS-4000, computerised 2 m FM transceiver, still under warranty. Has 8 MHz coverage, full scanning, 16 memories. Comes in orig carton with scanning mic, all accessories and instruction manual. $400 ONO. Ph: (08) 250 7259.

SORCERER COMPUTER 32K monitor Dick Smith with green perspex screen. Cassette Marantz printer paper tiger (IDS 445), over 40 programmes including word processor, chess, ham log programme. $1100 ONO. VK5ATU QTHR. Ph: (08) 258 7020.

FOR SALE — WA

YAESU FT680R brand new, still in carton. $395 ONO. Oscar VSWR meter hardly used. GWC $80 ONO. Ph: (098) 211 552. Ask for Lory.

FOR SALE — TAS

DATONG D-70 MORSE TUTOR. $100. Warren VK7CV ex VK7KWC. 15 Petchey Street, Bellerive, Tas 7018. Ph: (002) 44 1268.

FOR SALE —NT

TRANSCEIVERS. FT-101E with BLOB and pre-amp. All accs and handbook. $300. Standard 146A with ch 40, 50, R2, R8. Leather case, base charger, external mic, handbook. Good condition. Not a single fault since purchase. $100. Icom IC-202 VHF SSB complete. Hardly used. $150. Trevor VK8CO QTHR. Ph: (089) 27 9256. Upgrading sale.

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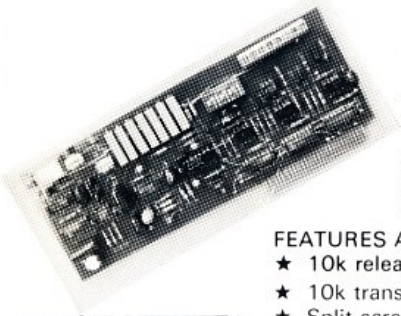

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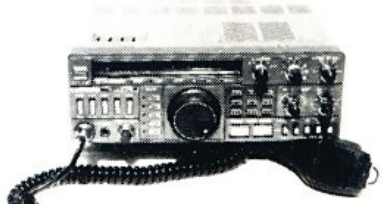

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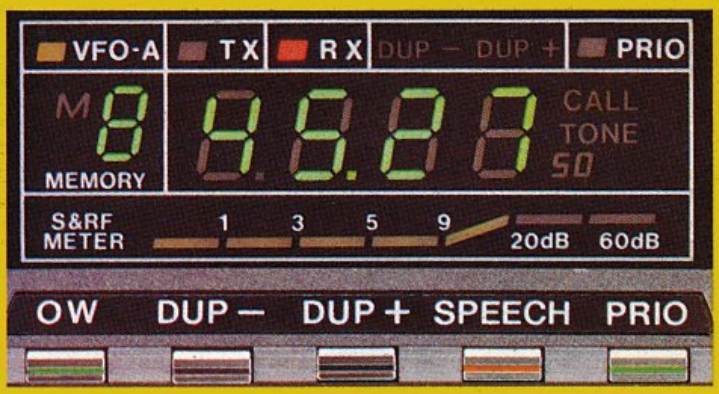
Now ICOM presents an important breakthrough in two-meter mobile communications, the IC-27A. The smallest two-meter mobile available, the IC-27A measures only 38 millimeters high by 140 millimeters wide. As an added bonus, the IC-27A, through ICOM engineering, is able to contain an internal speaker to provide ease of mounting and make the unit one small compact complete package.

25 Watts. In such an incredibly small package, the IC-27A is able to provide 25 watts of output power. And even though the IC-27A is the smallest available two-meter mobile unit, it has sacrificed none of the features found in fully featured VHF mobiles.



32 PL Frequencies Option. The IC-27A is available with optional 32 PL frequencies ready to go and controlled from the front panel knob. Each PL frequency may be selected by the main tuning knob and stored into memory for easy access along with frequency.

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The IC-27A comes complete with microphone. Note that the microphone shown is an optional model.

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